

May 21, 2019

File: CRDPJ 537381 - 18

**PROTECTED B**

Dr. B. Wong  
David R. Cheriton School of Computer Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Wong:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Providing Low-Latency Geo-Distributed Transaction Processing for High-Contention Workloads", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.



The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner to this project are summarized on the next page.



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

	<b>Original Amount Requested</b>	<b>Partner Cash</b>	<b>Partner In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$69,200
<b>Year 2</b>				\$44,200
<b>TOTAL</b>				\$113,400

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

Annie-France Bernier  
Program Officer  
Research Partnerships

Telephone: 613-943-7831  
Fax: 613-992-5337  
Annie-France.Bernier@nserc-crsng.gc.ca

AFB/bm

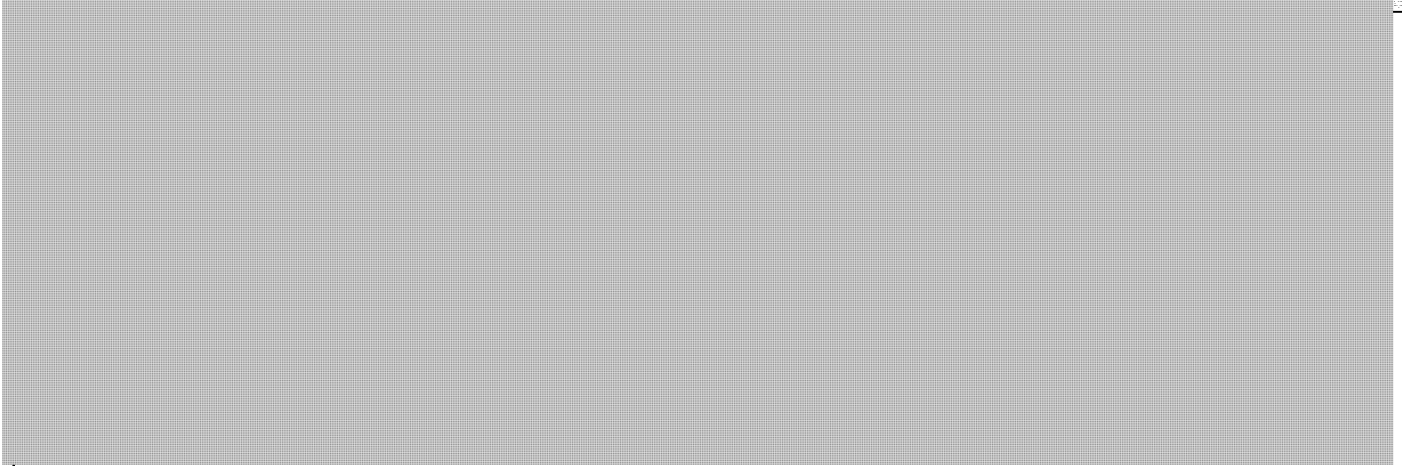
Enclosure

cc: T.B. Brecht, Computer Science, Waterloo  
K.M. Salem, Computer Science, Waterloo  
[REDACTED], Research, Waterloo  
[REDACTED] Huawei Technologies Co., Ltd.

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant s.20(1)(c) Wong
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**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.





Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

May 6, 2019

File: CRDPJ 531863 - 18  
Fiscal Year: 2019 – 2020

**PROTECTED A**

Dr. S. Salihoglu  
David R. Cheriton School of Computer Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Salihoglu:

**Re: Collaborative Research and Development Grant – Project (CRDPJ) entitled "Continuous Graph Querying and Graph OLAP Using Differential Computation", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that a grant was approved for the above-mentioned application. The award **starting on May 1<sup>st</sup>, 2019** was approved as follows:

Year	Awarded Amount	Fiscal Year	Payment Amount	<i>Fiscal Year Total (For NSERC's use)</i>
1	\$90,200	2019	\$90,200	<b>\$90,200</b>
2	\$90,200	2020	\$90,200	
3	\$90,200	2021	\$90,200	

Subsequent instalments, if any, will be subject to the availability of funds.

An explanation of how NSERC payments are disbursed, and the conditions that apply to this grant, are described in the enclosed **Terms and Conditions of Award**. The *Grant Summary* indicates the dates on which reports will be due for submission to NSERC. Reminders will be sent to you before the reports are due.

Prior written authorization from NSERC is required for deviations from the original activities of the research project, deviations from the initial total budget, or any re-allocation of resources of more than 20 per cent of an approved budget item.

Enclosed are several stickers. Please attach them in a visible location to any piece of equipment purchased with funds from this award. **To help elevate NSERC's visibility, you are requested to acknowledge NSERC's support in any dealings that you might have with the media regarding this project. I would also encourage you to add NSERC's logo (visual identifier) to your university web page(s) that present**

aspects of this project. The logo can be found here: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle_eng.asp).  
Please accept my best wishes for success in this research endeavour.

Sincerely,



Samir Boughaba  
Deputy Director  
Research Partnerships

Telephone: (613) 995-5710  
Fax: (613) 992-5337  
E-mail: Samir.Boughaba@nserc-crsng.gc.ca

SB/ha

Encl.

Cc: [Redacted], Research, Waterloo  
[Redacted], Finance, Waterloo  
[Redacted] Huawei Technologies Co., Ltd.  
NSERC Finance

April 3, 2019

File: CRDPJ 536639 - 18

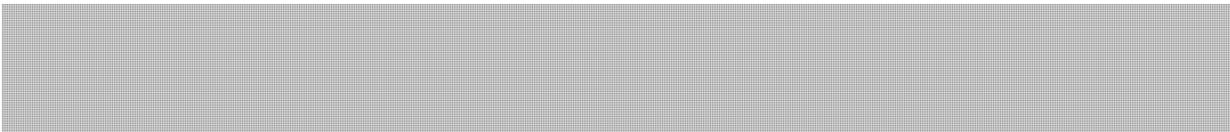
**PROTECTED B**

Dr. Ali Mashtizadeh  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 University Ave W  
Waterloo ON N2L 3G1

Dear Dr. Mashtizadeh:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Continuous performance optimization on odern Architectures", with Huawei  
Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.







 The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the NSERC Guidelines for External Reviewers. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform me if you wish to receive a copy of these documents in the other official language.

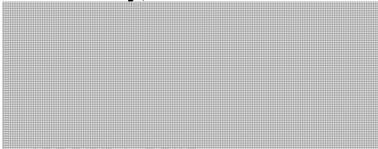
The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$69,200
Year 2				\$69,200
Year 3				\$52,200
<b>TOTAL</b>				<b>\$190,600</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,




Joseph Cecile  
Senior Program Officer  
Research Partnerships

Telephone: (613) 996-2239  
Fax: (613) 992-5337  
E-Mail: joseph.cecile@nserc-crsng.gc.ca

JC/hc

Enclosure

cc:  Research, University of Waterloo  
Huawei Technologies Co., Ltd.



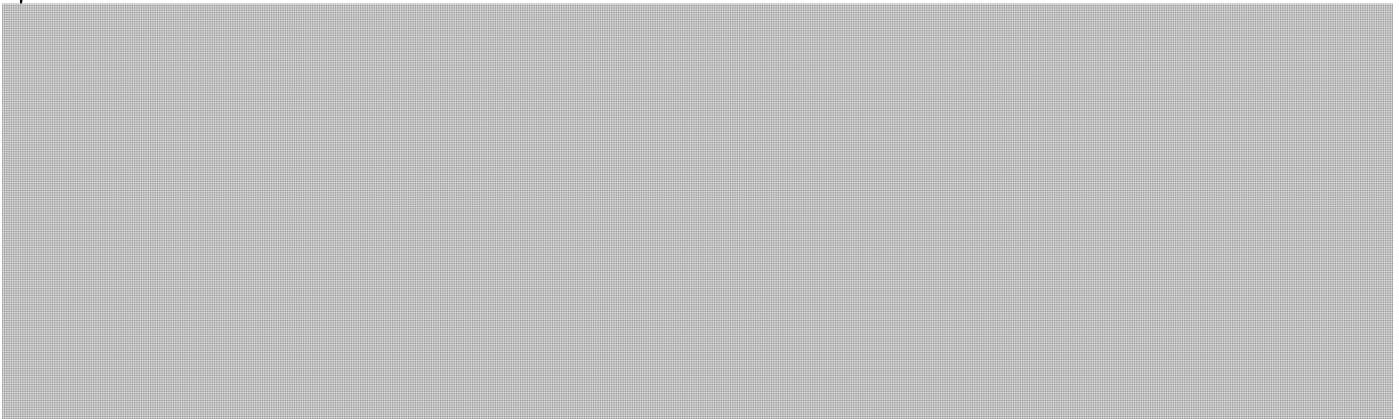
Personal identification no. (PIN)

Family name of applicant

Mashtizadeh

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



March 26, 2019

File: CRDPJ 536624 - 18

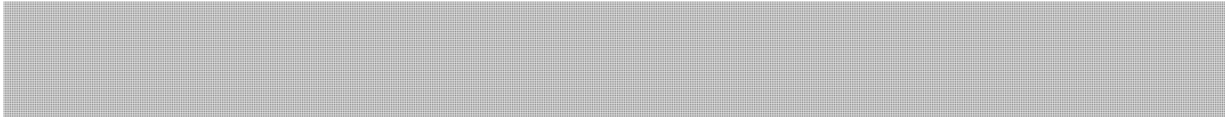
**PROTECTED B**

Dr. D.A. Johns  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 Kings College Rd  
Toronto ON M5S 3G4

Dear Dr. Johns:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Analog power minimization for high-speed 4-PAM serdes", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Toronto.



 The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act. Please inform me if you wish to receive a copy of these documents in the other official language.

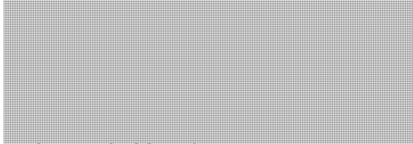
The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$56,629
Year 2				\$56,629
<b>TOTAL</b>				<b>\$113,258</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,





Joseph Cecile  
Senior Program Officer  
Research Partnerships

Telephone: (613) 996-2239  
Fax: (613) 992-5337  
E-Mail: joseph.cecile@nserc-crsng.gc.ca

JC/hc

Enclosure

cc:  Research, University of Toronto  
 Huawei Technologies Co., Ltd.

Personal identification no. (PIN)

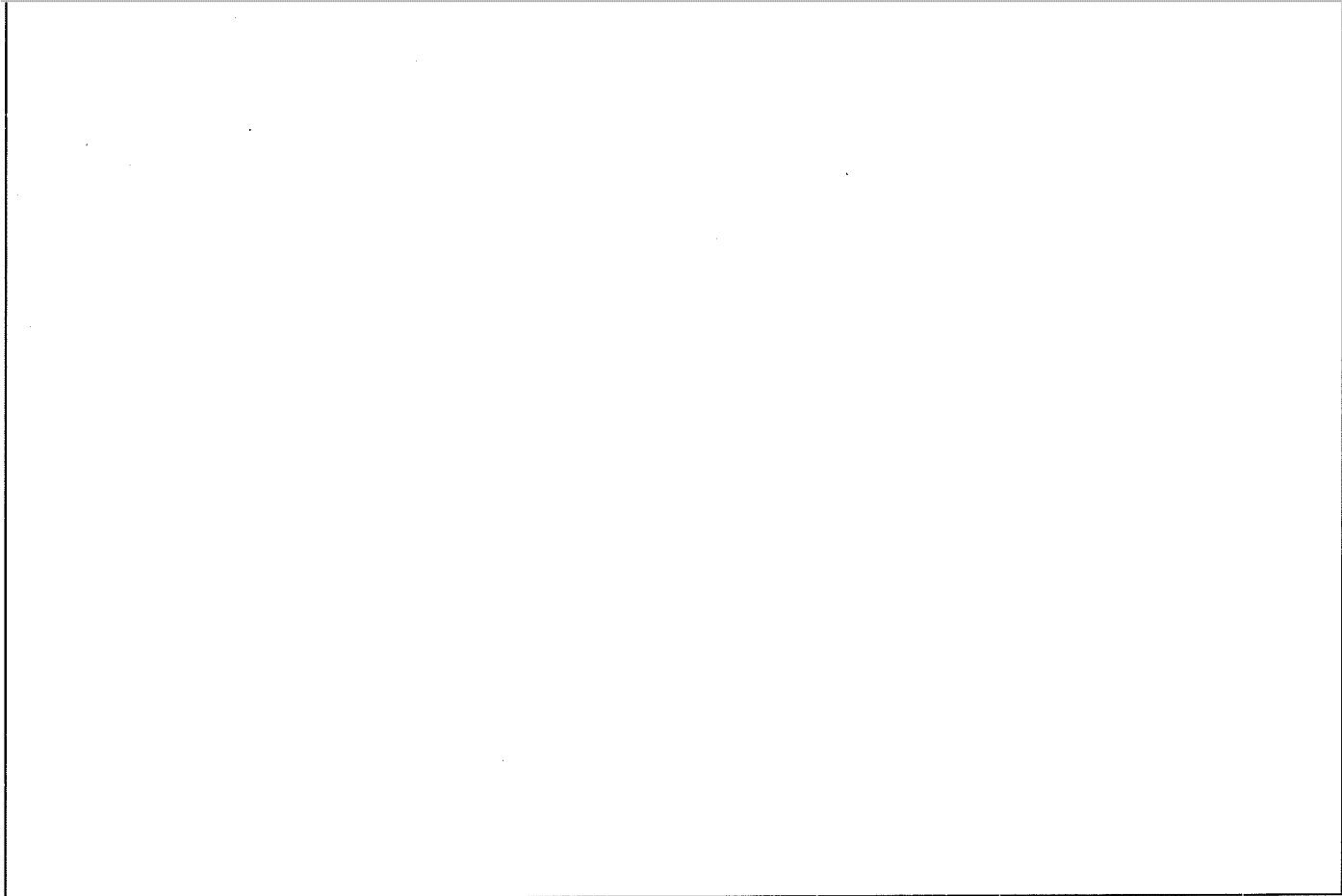
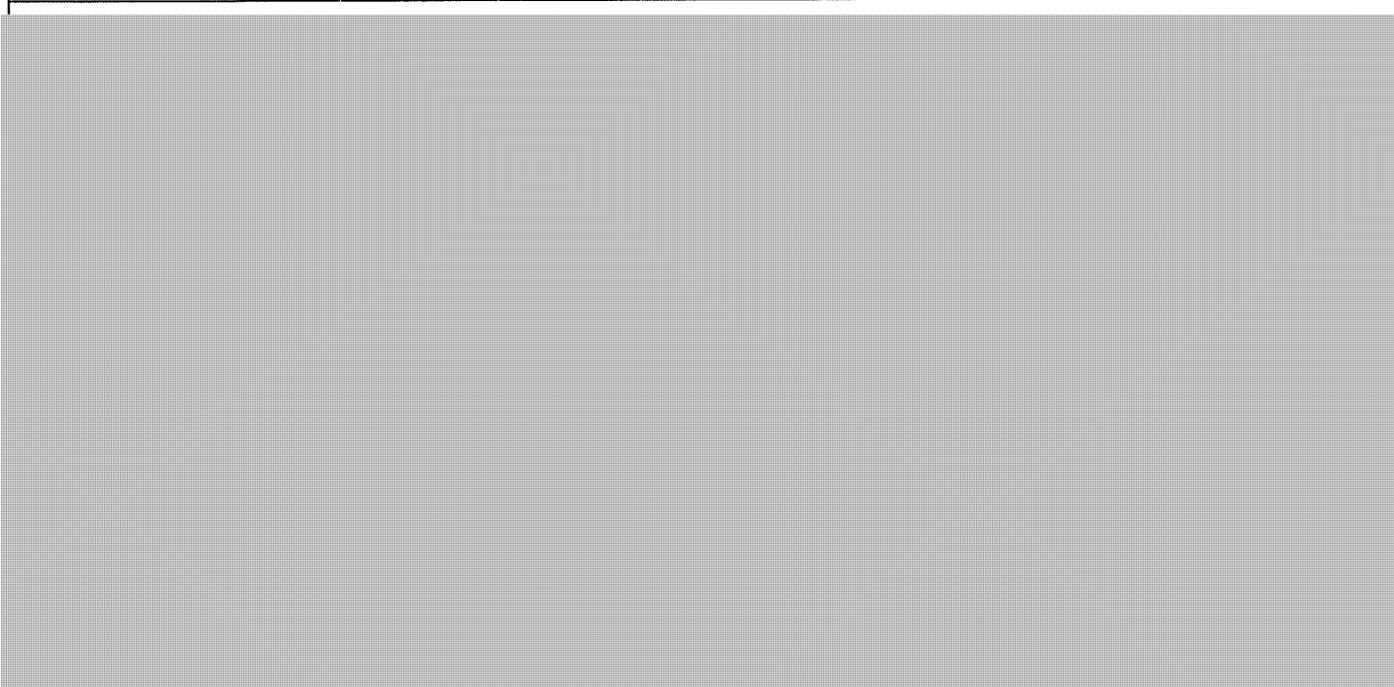
Family name of applicant

Valid

Johns

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



## IP Checklist

M.O. Damen 508260 - 16

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
➤ Background IP	
➤ Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file

JPC  
Joseph Cecile  
Senior Program Officer

May 12, 2017  
Date

## IP Checklist

W.J. Gross 506041 - 16

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	Section
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license or full ownership within a 6-month term from disclosure of IP	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file



*9 May / 2017*

Andrei Ionescu  
Manager

Date

NOTE: The effective date of the agreement <sup>is</sup> ~~of~~ October 24, 2016. Since the earliest start date for the NSERC project is April 1, 2017, the award letter will require that the agreement be extended so as to cover the duration of the project.

*for reports  
(1) mml*

*AKS  
5/17*

**Pages 842 to / à 845  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 846 to / à 848  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Page 849**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 850**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 851 to / à 854  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 855 to / à 856  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 857**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 858 to / à 859  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 860 to / à 865  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



Natural Sciences and Engineering  
Research Council of Canada

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naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

April 19, 2017

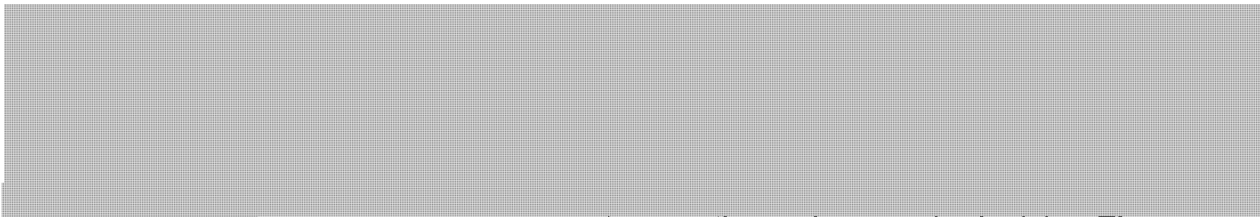
File: CRDPJ 506041 - 16

Dr. W.J. Gross  
Dept. of Electrical and Computer Eng.  
McGill University  
MCCONNELL ENGINEERING BLDG RM 633  
3480 RUE UNIVERSITY  
MONTREAL QC H3A 0E9

Dear Dr. Gross:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Efficient decoding of polar codes for 5G", with Huawei Technologies Canada**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of McGill.



The start date establishes the reporting and payment schedules. **The requested IP agreement must cover, at a minimum, the entire duration of the NSERC project.**

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the industrial sponsors to this project are summarized below.

	Original Amount Requested	Industrial Cash	Industrial In-kind	Amount Recommended
Year 1				\$0
Year 2				\$258,916
Year 3				\$181,644
Year 4				\$104,940
Year 5				\$197,000
<b>TOTAL</b>				<b>\$742,500</b>



Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Andrei Ionescu  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: (613) 992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

AI/ph

Enclosure

cc: [Redacted] Research, McGill  
[Redacted] Huawei Technologies Canada

Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Gross
--	---------------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

[REDACTED]



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

2019/06/14

File: CRDPJ 537348 - 18  
Fiscal Year: 2019 – 2020

**PROTECTED A**

Dr. A. Sheikholeslami  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Sheikholeslami and co-applicant copied below:

**Re: Collaborative Research and Development Grant – Project (CRDPJ) entitled "Circuits for Beyond 100Gb/s Wireline Communications", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that a grant was approved for the above-mentioned application. The award **starting on July 2, 2019** was approved as follows:

Year	Awarded Amount	Fiscal Year	Payment Amount	<i>Fiscal Year Total (For NSERC's use)</i>
1	\$201,266.00	2019	\$201,266.00	\$201,266.00
2	\$201,266.00	2020	\$201,266.00	
3	\$201,266.00	2021	\$201,266.00	

Subsequent instalments, if any, will be subject to the availability of funds.

An explanation of how NSERC payments are disbursed, and the conditions that apply to this grant, are described in the enclosed **Terms and Conditions of Award**. The *Grant Summary* indicates the dates on which the reports will be due at NSERC. Reminders will be sent to you before the reports are due.

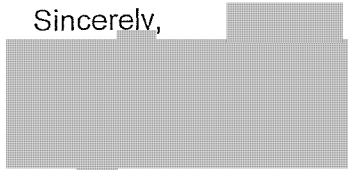
Prior written authorization from NSERC is required for deviations from the original activities of the research project, deviations from the initial total budget, or any re-allocation of resources of more than 20 per cent of an approved budget item.

Enclosed are several stickers. Please attach them in a visible location to any piece of equipment purchased with funds from this award. **To help elevate NSERC's visibility, you are requested to acknowledge NSERC's support in any dealings that you might have with the media regarding this project. I would also encourage you to**

add NSERC's logo (visual identifier) to your university web page(s) that present aspects of this project. The logo can be found here: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle_eng.asp).

Please accept my best wishes for success in this research endeavour.

Sincerely,



Ma Claude Caron  
Manager  
Research Partnerships

Telephone : 613-996-1079  
Fax: 613-992-5337  
E-Mail: [marie-claude.caron@nserc-crsng.gc.ca](mailto:marie-claude.caron@nserc-crsng.gc.ca)

MCC/mak

Encl.

Cc: [Redacted] Research, Toronto  
[Redacted] Finance, Toronto  
A. Chan Carusone, Electrical & Computer Engineering, Edward S. Rogers  
Sr. Department of, Toronto  
[Redacted] Huawei Technologies Co., Ltd.  
NSERC Finance



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

s.19(1)

s.20(1)(b)

s.20(1)(c)

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

## Terms and Conditions of Award Grant Summary

**File:** CRDPJ 537348 - 18

**Project Title:** Circuits for Beyond 100Gb/s Wireline Communications

**Grantee:** A. Sheikholeslami, Electrical & Computer Engineering,  
Edward S. Rogers Sr. Department of, Toronto

**Partner(s):** [REDACTED] Huawei Technologies Co., Ltd.

**Co-grantee(s):** A. Chan Carusone, Electrical & Computer Engineering,  
Edward S. Rogers Sr. Department of, Toronto

**Collaborator(s):**

**Project Start Date:** 2019/07/02      **Project End Date:** 2022/07/01

<b>Report Due Date(s):</b>	Progress Report 1	2020/04/02
	Progress Report 2	2021/04/02
	Final Report	2022/09/01

**Amount of Award:**

**Partner Contribution:**

1/3	\$201,266	2019/07/02
2/3	\$201,266	2020/07/02
3/3	\$201,266	2021/07/02

CASH	IN KIND
------	---------



Marie Claude Caron  
Manager  
Research Partnerships

Telephone : 613-996-1079  
Fax: 613-992-5337  
E-Mail: [marie-claude.caron@nserc-crsng.gc.ca](mailto:marie-claude.caron@nserc-crsng.gc.ca)

## TERMS AND CONDITIONS OF AWARD

### Collaborative Research & Development Grants

#### 1. Introduction

The Terms & Conditions for a Research Partnerships (RP) grant is a statement that establishes the responsibilities of each party in the collaboration and highlights important policies affecting the grant.

By drawing on the funds provided through this award, you (the "grantee" or "co-grantee", collectively referred to as the "grantees") confirm that, during the tenure of this grant/award, you and the co-grantee(s) will comply with the following terms and conditions. You will ensure that the terms and conditions of this award are known and understood by the partners and/or other participating organizations (collectively referred to as "the supporting organizations"). In addition, the grantees acknowledge their obligation to cooperate in working towards a successful outcome and to meeting their reporting and financial obligations.

#### 2. General

1. **You will use grant funds (including financial contributions from both NSERC and the partners) only for the specific purposes for which they were awarded.** Grant funds may not be used for items not approved, or for unauthorized purposes such as indirect costs of research.
2. You will provide true, complete, accurate information in any documents related to your grant/award, and you will represent yourself, your research and your accomplishments in a manner consistent with the norms of the relevant field
3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
5. You are not currently ineligible to apply for and/or hold funds from NSERC, the Social Sciences and Humanities Research Council (SSHRC), or the Canadian Institutes of Health Research (CIHR), or any other research or research funding organization worldwide for reasons of breach of policies on responsible conduct of research, such as ethics, integrity or financial management policies. If at any time you become ineligible for any of these reasons, you will advise your institutional officials and NSERC immediately, in writing.
6. You will comply with the [Tri-Agency Framework: Responsible Conduct of Research](#), which includes but is not limited to the [Tri-Agency Financial Administration Guide](#), the Program Guide for Professors, and the Tri-Agency Research Integrity Policy, and with any amendments to these that NSERC may adopt.
7. If you are or have been (at any time during the past 12 months) a federal public servant, you have complied with and will continue to respect the [Values and Ethics Code for the Public Sector](#).

8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
9. In the event of any change in your eligibility status, you will inform NSERC and your institutional officials immediately, in writing.
10. You will inform institutional officials of any changes in the nature of the research that may have an impact on certification or approvals as in section 2.4 Agency Requirements for Certain Types of Research of the Tri-Agency Framework: Responsible Conduct of Research.
11. You will inform NSERC and your institutional officials of any changes in the nature of the research that may require an environmental review/assessment or involves the use of human pluripotent stem cells. You will not proceed with these research activities requiring additional certification until NSERC approval has been obtained.
12. You will inform your institutional officials if your research plan changes to include new activities involving humans or the use of animals. You will not proceed with these research activities until institutional approval has been obtained.

Unless otherwise specified, the policies governing RP awards, including both the NSERC financial contribution and the partners' financial contribution are the same as those that apply generally to NSERC awards and to the use of grant funds.

In addition, you understand that:

the Access to Information Act and the Privacy Act (ATIP), and the Use and Disclosure of Personal Information Provided to NSERC, pertain to the information NSERC collects from and about you.

### **3. Duration of the Award**

The duration of the award is indicated by the start and end dates in the Grant Summary. Should circumstances change, adjustments to these dates can be negotiated. A written request for an extension will be considered by NSERC and will be approved if the need for an extension is well justified, and as long as there is agreement with other participants and collaborators.

### **4. Schedule of NSERC Payments**

The approved amount of the grant is given in the Grant Summary.

In order to maximise the management of public funds, NSERC will release annual instalments of awards according to the following schedule:

- up to \$250,000 – one payment
- \$250,001 to \$500,000 – two payments at six month intervals
- \$500,001 to \$1,000,000 – four payments at three month intervals
- \$1,000,001 or more – monthly payments

## **5. Release of Instalments**

The second and subsequent instalments will be released on or about the anniversary of the start date subject to:

- the availability of funds;
- confirmation that the partner(s) have met their obligations in providing cash and in-kind support;
- confirmation of continued financial support by the partner(s) for the following term;
- satisfactory review of progress;
- demonstrated need for funds.

Depending on the above, the amount of the instalment is negotiable.

NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

## **6. Research Objectives**

The grantees and the collaborators will make every effort to adhere to the approved research plan. NSERC must approve major deviations in the approved plan or research objectives **before** the changes are implemented.

## **7. Interactions Among the Grantees and the Supporting Organizations**

Consistent with the intent of fostering productive research collaborations, the grantees will hold regular discussions with the supporting organizations to exchange information, examine results, review priorities and consider measures to enhance the mutual benefits. NSERC should be informed of any major developments or situations where NSERC staff might be of assistance.

## **8. Progress Reporting and Review**

As indicated in the Grant Summary, or upon request, the grantee will provide a report that describes progress to date and updates the plans for the future conduct of the research; and the resources required to complete the approved work.

Progress reports are requested at a frequency that depends on the size and the total duration of the award:

- all CRD awards are required to provide a final report;
- CRD grants with an awarded value  $\geq$  \$150,000 in the first year or on annual average, are required to provide an annual progress report;
- CRD grants with an awarded value  $\geq$  \$50,000 and  $<$  \$150,000 in the first year or on an annual average are required to provide a progress report near the end of each two year cycle:
  - near the end of year two for three and four year CRD awards;
  - near the end of year two and year four for five year CRD awards.
- at the end of year two and subsequent, where a progress report is not required, a confirmation of the continuing collaboration with the partners, receipt of the partner's



contributions and the need for funds (grant account balance) will be requested from the grantee and the Institution;

- CRD grants with an award value < \$50,000 in the first year or on an annual average will not be required to provide a progress report.

NSERC will send reminders that a progress report or other information is due, and will provide guidelines on the items to be addressed.

At its discretion, NSERC may require a progress report when one is not normally required.

## **9. Budgets**

**Some latitude is allowed in adherence to planned expenditures, however; NSERC must approve the reallocation of resources of more than 20% of an approved budget item in advance.** (e.g. The training of highly qualified personnel is an NSERC priority; **any deviations** in the approved training plan must receive prior authorization from NSERC).

NSERC bears no responsibility for expenditures beyond the amount in the grant account.

## **10. Participation of the Partners**

Each partner agrees to:

- honour its commitment to the project (in cash and/or in kind) as approved;
- provide periodic assessments, as requested by NSERC, to assist in the evaluation of the progress of the research;
- make every effort to use the project results in its Canadian operation and to the benefit of the Canadian economy and Canadians.

## **11. Intellectual Property**

The grantee and co-grantees, the universities, and partners agree to abide by *NSERC's Policy on Intellectual Property* ([http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip\\_pi\\_eng.pdf](http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip_pi_eng.pdf)). *NSERC's Policy on Intellectual Property (IP)* supports the premise that every effort should be made to exploit the results of NSERC-funded research for the benefit of Canada and Canadians. As a condition of accepting an award, NSERC grantees agree to disclose to their institutions any IP with commercial potential arising from the award should they decide to pursue commercialization. If you disclose any potential IP arising from the research, you and the institution will endeavor to obtain the greatest possible economic benefit to Canada from the resulting commercial activity. This requirement for disclosure is not intended to supersede the IP ownership policy that the institution might already have in place.

## **12. Change of Status – Grantees**

The grantee and/or the university will inform NSERC immediately of significant changes in the status of the grantee and/or the co-grantees such as taking a sabbatical, or other leave, or upon permanent departure from the university.

## **13. Change of Status –Partners**

The grantee will notify NSERC immediately of any change in status of the partners in the grant. These changes could include any or all of the following:

- contact name at the organization;
- buyouts, change of ownership and subsequent name change of the organization;
- withdrawal or adjustment of cash and/or in-kind support;
- new organizations participating.

Depending on the change, a new Form 183A (Information Required from Organizations Participating in Research Partnerships) may have to be completed including a letter of support (<http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/183A/e.asp>).

#### **14. Termination of Support**

NSERC reserves the right to terminate support at any point:

- should progress be found to be unsatisfactory;
- if the support of the partner(s) falls to a level substantially less than the amount stated in the Grant Summary, or is withdrawn entirely and a suitable replacement cannot be found;
- for other issues that may arise.

In the event of early termination of an award, NSERC will negotiate an orderly phase-out of the project or program to ensure minimal disruption especially for any HQP in training. However, in cases where there is an allegation of a breach of NSERC policy, or a confirmed breach, the Tri-Agency Framework: Responsible Conduct of Research applies.

#### **15. Public Announcements and Acknowledgement of NSERC Support**

NSERC normally makes a decision on the need for an official public announcement of competition results. Your institution must refrain from making any announcements until this takes place. All announcements of awards must be made in adherence to the <http://www.science.gc.ca/default.asp?lang=En&n=711200B1-1> (also see relevant sections of the <http://www.science.gc.ca/default.asp?lang=En&n=56B87BE5-1>

Funding recipients may be asked to take part in NSERC's public announcement. This does not prevent you from confidentially sharing information about your funding with your collaborators or referring to NSERC funding in applications for other funding. If you foresee any issues or concerns arising from this condition, please contact NSERC.

By drawing on the funds provided through this award, the grantees agree that in all communications relating to the research, or research results, they will acknowledge NSERC support and the support of the participating Canadian Government department and/or agencies.

#### **16. Consent to Disclosure of Personal Information:**

You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were

employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

**Note:** If you have any concerns about your ability to comply with the terms and conditions listed above, contact your institutional official or NSERC staff responsible for the program immediately. Do not agree to the terms and conditions and do not draw down on any funds paid to you or to the host institution until you are certain that you can and will comply with all of the requirements.



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

April 23<sup>rd</sup>, 2019

File: CRDPJ 537348 - 18

**PROTECTED B**

Dr. A. Sheikholeslami  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Sheikholeslami:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Circuits for Beyond 100Gb/s Wireline Communications", with Huawei  
Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Toronto.

[Redacted]

The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

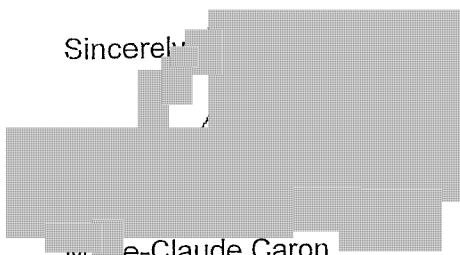
The cash commitments of NSERC and the partners to this project are summarized on the next page.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$201,266
Year 2				\$201,266
Year 3				\$201,266
<b>TOTAL</b>				<b>\$603,798</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Marie-Claude Caron  
 Manager  
 Research Partnerships

Telephone: 613-996-1079  
 Fax: 613-992-5337  
 E-Mail: [marie-claude.caron@nserc-crsng.gc.ca](mailto:marie-claude.caron@nserc-crsng.gc.ca)

MCC/mak

Enclosure

cc: A. Chan Carusone, Electrical & Computer Engineering, Edward S. Rogers Sr.  
 Department of, Toronto, Toronto  
 Research, Toronto  
 Huawei Technologies Co., Ltd.



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

February 11<sup>th</sup>, 2019

File: CRDPJ 537348 - 18

Dr. A. Sheikholeslami  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Sheikholeslami:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Circuits for Beyond 100Gb/s Wireline Communications", with Huawei  
Technologies Co., Ltd.**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks.

NSERC will attempt to reach a funding decision within three to five months of receipt of a complete application and where no additional issues are raised during the peer review process. I will keep you informed of any significant delays.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. You are therefore encouraged to start discussions with your partner as soon as possible.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,

(Signature not required)

Marie-Hélène Côté  
Manager  
Research Partnerships

Telephone: 613-995-8909  
Fax: 613-992-5337  
E-Mail: marie-helene.cote@nserc-crsng.gc.ca

MHC/wr

**Canada**

Cc: A. Chan Carusone, Electrical & Computer Engineering, Edward S. Rogers Sr.  
Department of, Toronto  
[REDACTED] Research, Toronto  
[REDACTED] Huawei Technologies Co., Ltd.



For NSERC office use only
337378

**Form 101 - Application for a Grant**

**Send to NSERC with your attachments, if applicable**

**Reference Number:** 411315579

**Applicant:** Ali Sheikholeslami  
Toronto

**NSERC PIN:**

**Program:** Collaborative Research and Development Grant

**Application Title:** Circuits for Beyond 100Gb/s Wireline Communications

Ali Sheikholeslami

**Form 101 - Application for a Grant**

**Electronic Attachments:**

- Budget Justification - Budget Justification
- Contributions from Supporting Organizations - Attachment - Support Letter from Huawei Technologies Canada Co.
- Relationship To Other Research Support - Relationship o Other Research Support
- Proposal - CRD Proposal
- References - References
- Intellectual Property - Attachment - Research Agreement including IP terms

Ali Sheikholeslami

**F100/Personal Data Form**

**Electronic Attachments:**

- Contributions - Form 100 - Contributions

Anthony Chan Carusone

**F100/Personal Data Form**

**Electronic Attachments:**

- Contributions - Contributions to Research

Ali Sheikholeslami

**Form 183A - Information Required from Organizations Participating in RPP (submitted by applicant)**

**Electronic Attachments:**

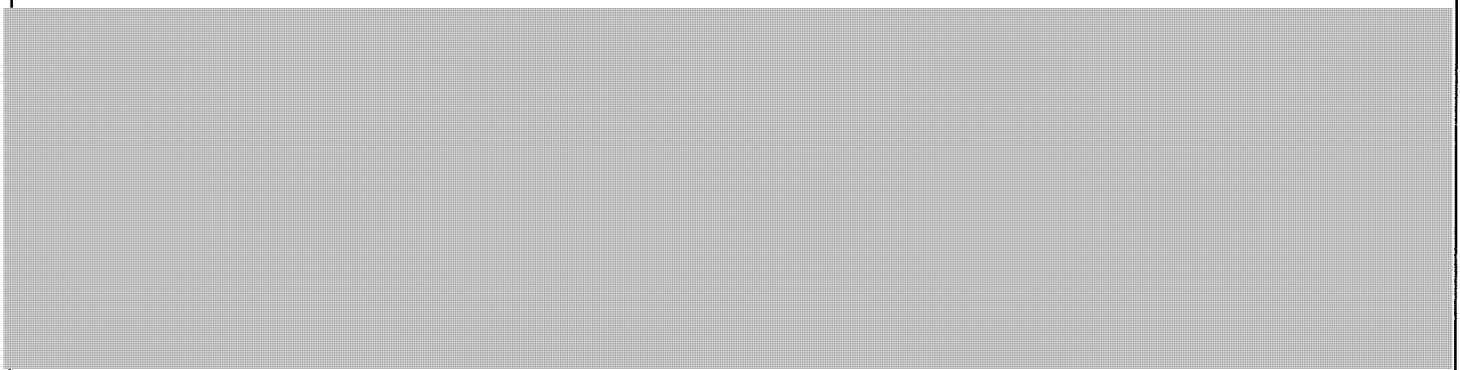
- Letter(s) of support - Support Letter from Huawei Technologies Canada Co.
- Company Profile - Company Profile



Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Sheikholeslami
--	--

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Empty text area for providing intellectual property details.

**Pages 92 to / à 107  
are withheld pursuant to sections  
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**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
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**Page 108**

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**of the Access to Information Act  
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**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

s.19(1)

s.20(1)(b)

s.20(1)(c)

**Ione**, Andrei

---

**From:** Ionescu, Andrei  
**Sent:** January 11, 2018 2:34 PM  
**To:** [REDACTED]  
**Cc:** Holloway, Pascale  
**Subject:** RE: CRD No.: 515539-2017 Rusch

<b>Tracking:</b>	<b>Recipient</b>	<b>Delivery</b>
	[REDACTED]	
	Holloway, Pascale	Delivered: 2018/01/11 2:34 PM

Dear [REDACTED]

[REDACTED]

[REDACTED]

Best regards,  
Andrei

**Andrei R. Ionescu, Ph.D., CAPM**  
**Manager, Research Partnerships**  
**Gestionnaire, Partenariats de recherche**

☎ 1-613-943-7604 | 📠 1-613-947-6371

Please feel free to reply in the official language of your choice. / N'hésitez pas à me répondre dans la langue officielle de votre choix.



Natural Sciences and Engineering  
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naturelles et en génie du Canada



---

**From:** [REDACTED]  
**Sent:** January 9, 2018 5:00 PM  
**To:** Ionescu, Andrei  
**Subject:** CRD No.: 515539-2017 Rusch

[REDACTED]

I wish you a very happy and prosperous new year.

[REDACTED]

## IP Checklist

L.A. Rusch 515539 - 17

IP Agreement not required

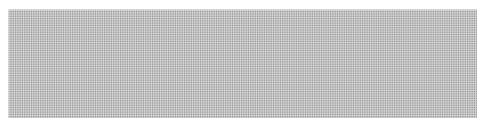
### IP Agreement Mandatory Elements

Mandatory Element		Section
1. Timely exploitation – only for exclusive license or assignment		
2. Protect IP Assets of Partners		
➤ Background IP		
➤ Review of publications for partner's confidential information		
3. Maximum of 6 month publication delay		
4. No delay of student thesis defence		
5. License back to institution/researchers for non-commercial purposes		

### Type of Access

Unrestricted dissemination		
Non-exclusive licensing		
Option for negotiating exclusive license		
Exclusive license		
Joint ownership with restrictions on both parties		
Partial assignment of ownership		
Full assignment of ownership		

Update the internal tab in Namis and place original IP checklist on file



Andrei Ionescu  
Manager

*January 11<sup>th</sup>, 2018*

Date

START DATE: JANUARY 1, 2018



Holloway, Pascale

---

**From:** Ionescu, Andrei  
**Sent:** Thursday, January 11, 2018 7:54 AM  
**To:** Holloway, Pascale  
**Subject:** FW: CRD No.: 515539-2017 Rusch  
**Attachments:** contract signed by all 2.pdf

IP for Rusch. Thanks!

**From:** [REDACTED]  
**Sent:** January 9, 2018 5:00 PM  
**To:** Ionescu, Andrei  
**Subject:** CRD No.: 515539-2017 Rusch

Duplicate email / Courriel en double

[REDACTED]

I wish you a very happy and prosperous new year.

[REDACTED]

**From:** Ionescu, Andrei [mailto:Andrei.Ionescu@nserc-crsng.gc.ca]  
**Sent:** Thursday, December 21, 2017 1:59 PM  
**To:** [REDACTED] <[REDACTED]>  
**Subject:** RE: CRD No.: 515539-2017 Rusch

Dear [REDACTED]

[REDACTED]

Happy Holidays,  
Andrei

**Andrei R. Ionescu, Ph.D., CAPM**  
**Manager, Research Partnerships**  
**Gestionnaire, Partenariats de recherche**

☎ 1-613-943-7604 | 📠 1-613-947-6371

Please feel free to reply in the official language of your choice. / N'hésitez pas à me répondre dans la langue officielle de votre choix.



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**Pages 121 to / à 143**  
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**Page 144**

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350 Albert Street  
Ottawa, Canada  
K1A 1H5

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naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

December 21, 2017

File: CRDPJ 515539 - 17

Dr. L.A. Rusch  
Génie électrique et génie informatique  
Université Laval  
PAV ADRIEN-POULIOT LOCAL 1300  
1065 AV DE LA MEDECINE  
QUEBEC QC G1V 0A6

Dear Dr. Rusch:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Experimental research in high capacity communications for data centers", with Huawei Technologies Canada**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Laval.

The start date establishes the reporting and payment schedules. **The requested IP agreement must cover, at a minimum, the entire duration of the NSERC project.**

I enclose for your information a copy of the Site Visit Report and NSERC guidelines for Site Visit Committee, which provides the rationale for the amounts approved and comments on the aspects of the proposal

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

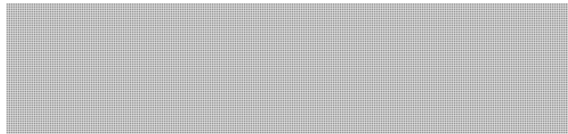
The cash commitments of NSERC and the industrial sponsors to this project are summarized below.

	<b>Original Amount Requested</b>	<b>Industrial Cash</b>	<b>Industrial In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$333,333
<b>Year 2</b>				\$333,333
<b>Year 3</b>				\$166,667
<b>TOTAL</b>				\$833,333

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,




Andrei Ionescu  
Manager  
Research Partnerships  
crsng.gc.ca

Telephone: (613) 943-7604  
Fax: (613) 992-5337  
E-Mail: Andrei.Ionescu@nserc-

Al/ph

Enclosure

cc: S. LaRochelle, Génie électrique et génie informatique, Laval  
W. Shi, Génie électrique et génie informatique, Laval, Laval  
J.F. Simard, Research, Laval  
 Huawei Technologies Canada

9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Rusch
--	-----------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

[REDACTED]



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

July 12, 2018

File: CRDPJ 522308 - 17

Norbert Lütkenhaus  
Dept of Physics & Astronomy  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Lutkenhaus:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Protocol Security Analysis for Discrete Modulated Continuous Variable Quantum Key Distribution", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.



The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

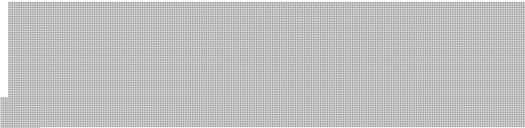
The cash commitments of NSERC and the partner(s) to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$76,283
Year 2				\$76,283
Year 3				\$76,283
<b>TOTAL</b>				<b>\$228,849</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,





Andrei Ionescu  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: (613) 992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

AI/ph

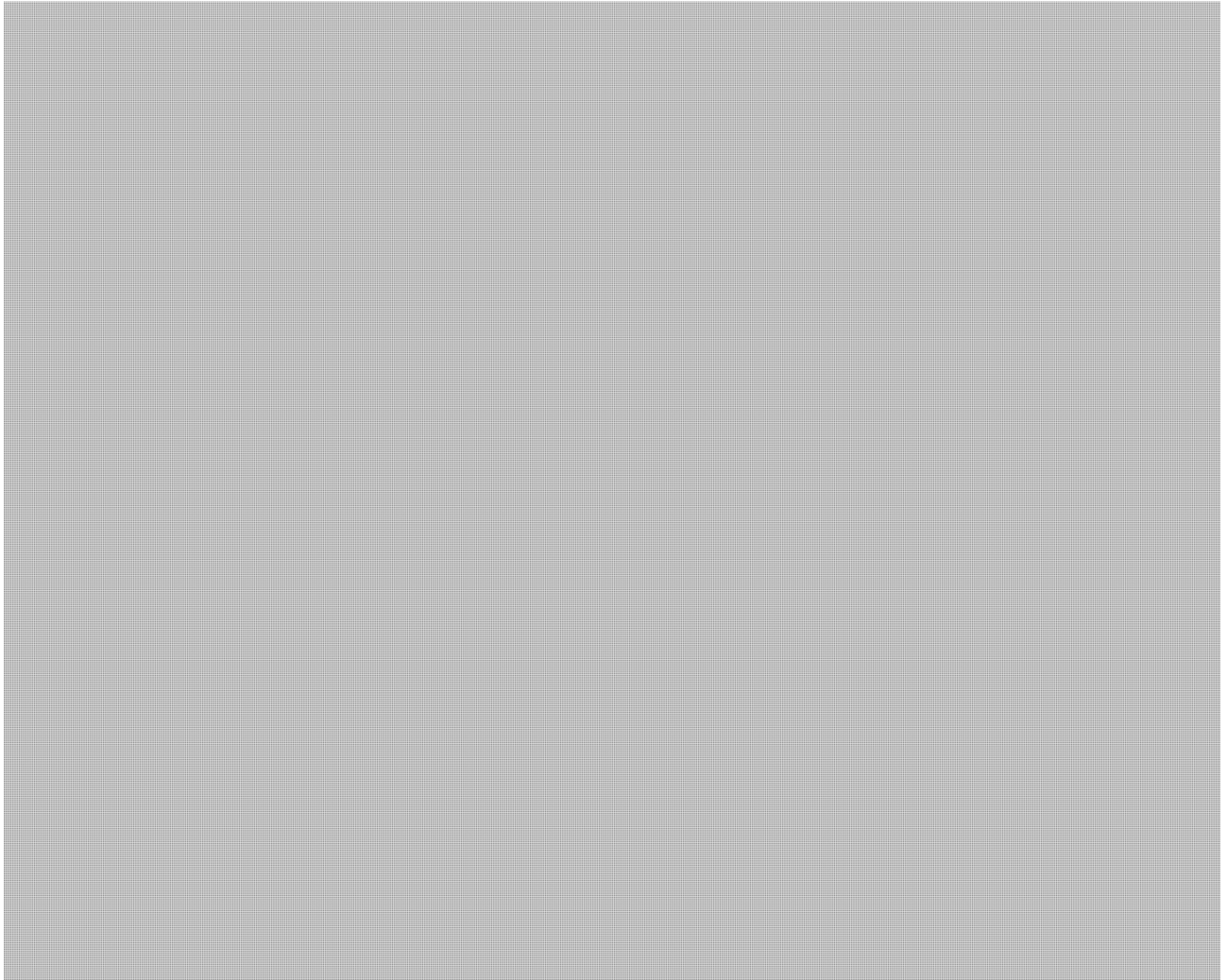
Enclosure

cc:

 Research, Waterloo  
 Huawei Technologies Co., Ltd.



**References**

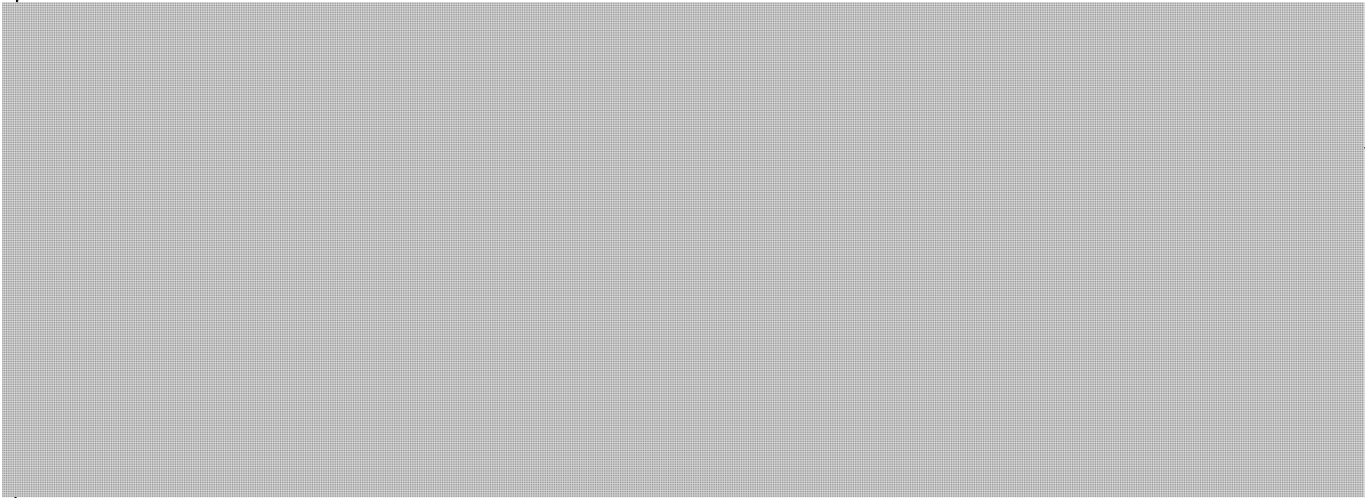


9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN)	Family name of applicant
Valid [REDACTED]	Lutkenhaus

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



**Pages 152 to / à 165  
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**13(1)(c), 20(1)(b), 20(1)(c)**

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**Page 166**

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est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

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de la Loi sur l'accès à l'information**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

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**Pages 175 to / à 184  
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**13(1)(c), 20(1)(b), 20(1)(c)**

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**Page 185**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
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**13(1)(c), 19(1), 20(1)(b)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Personal identification no. (PIN)

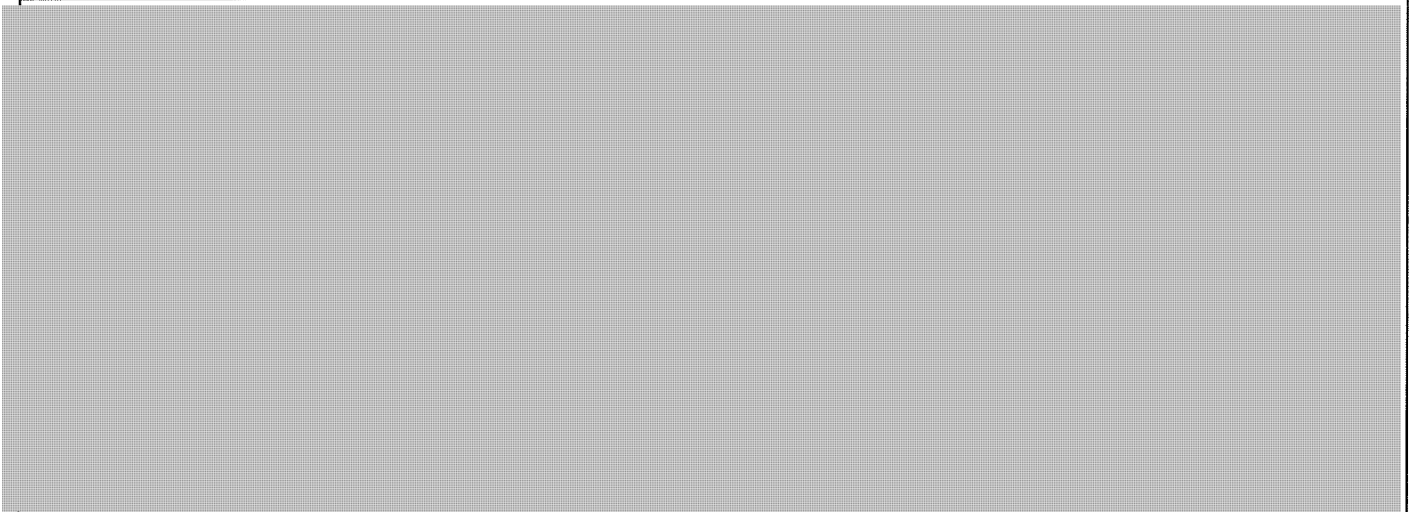
Family name of applicant

**Valid**

Lutkenhaus

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Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.





Natural Sciences and Engineering  
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350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

November 29, 2018

File: CRDPJ 532053 - 18

**PROTECTED B**

Dr. F.R. Kschischang  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Kschischang:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Efficient Fiber-optic Data Transmission in the Nonlinear Regime", with Huawei  
Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Toronto.



The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner(s) to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$83,400
Year 2				\$83,400
Year 3				\$83,400
<b>TOTAL</b>				<b>\$250,200</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,





Andrei Ionescu  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: (613) 992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

Al/ph

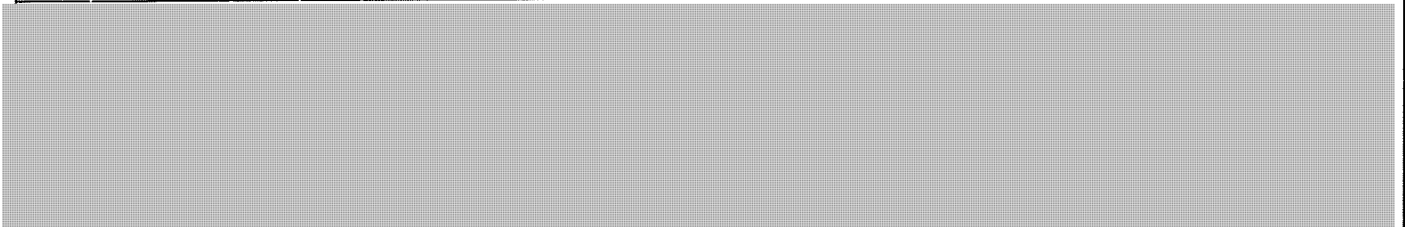
Enclosure

cc:  Research, Toronto  
 Huawei Technologies Co., Ltd.

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Kschischang
--	---

**INTELLECTUAL PROPERTY**

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350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.20(1)(b)

s.20(1)(c)

July 23, 2019

File: CRDPJ 537905 - 18

**PROTECTED B**

Dr. S.I. Al Kiswany  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Al Kiswany:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Disaggregated Cloud", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.

[REDACTED] The start date  
establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

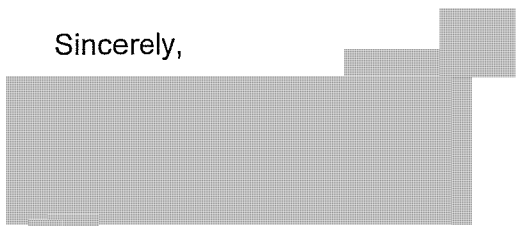
The cash commitments of NSERC and the partner to this project are summarized below.

	<b>Original Amount Requested</b>	<b>Partner Cash</b>	<b>Partner In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$44,200
<b>Year 2</b>				\$109,200
<b>Year 3</b>				\$109,200
<b>TOTAL</b>				\$262,600

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Roger Delisle  
Manager  
Research Partnerships

Telephone: (613) 943-1386  
Fax: (613) 992-5337  
E-Mail: [Roger.Delisle@nserc-crsng.gc.ca](mailto:Roger.Delisle@nserc-crsng.gc.ca)

RD/gp

Enclosure

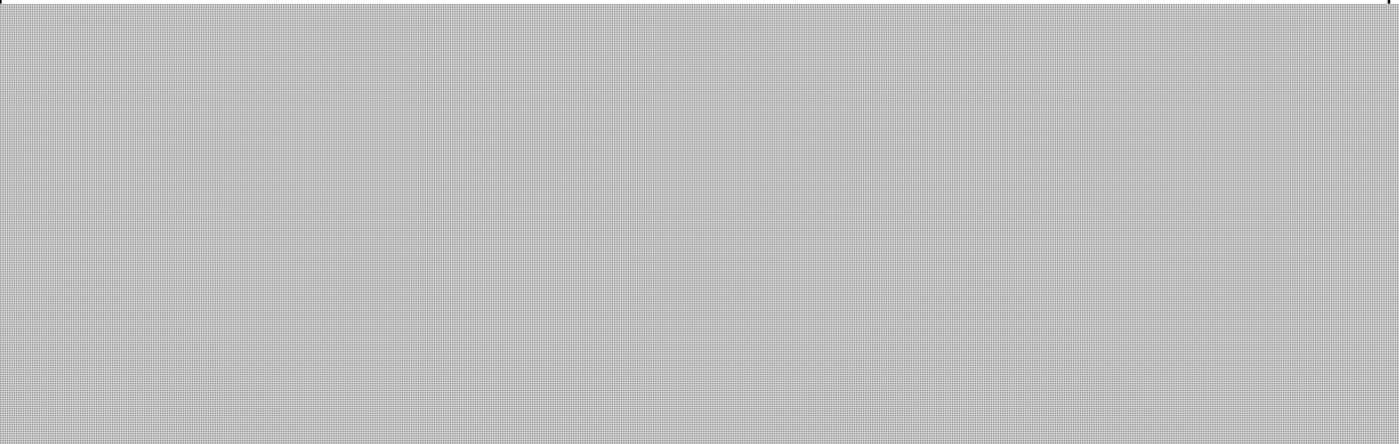
cc: , Research, Waterloo  
 Huawei Technologies Co., Ltd.



Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Al Kiswany
--	--

**INTELLECTUAL PROPERTY**

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Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

February 19, 2019

File: CRDPJ 533970 - 18

**PROTECTED B**

Dr. P. Berini  
School of Electrical Engineering &  
Computer Science, University of Ottawa  
800 KING EDWARD AVE  
OTTAWA ON K1N 6N5

Dear Dr. Berini:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Optical phased array based on electrically tunable plasmonic nanoantennas", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Ottawa.

The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner(s) to this project are summarized below.

	<b>Original Amount Requested</b>	<b>Partner Cash</b>	<b>Partner In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$125,500
<b>Year 2</b>				\$125,500
<b>Year 3</b>				\$125,500
<b>TOTAL</b>				\$376,500

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,




Andrei Ionescu, PhD  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: (613) 992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

AI/ph

Enclosure

cc:  Research, Ottawa  
Huawei Technologies Co., Ltd.

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant <b>Berini</b>
--	---

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

[REDACTED]



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Research Council of Canada

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350 Albert Street  
Ottawa, Canada  
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350, rue Albert  
Ottawa, Canada  
K1A 1H5

April 16, 2019

File: CRDPJ 536506 - 18

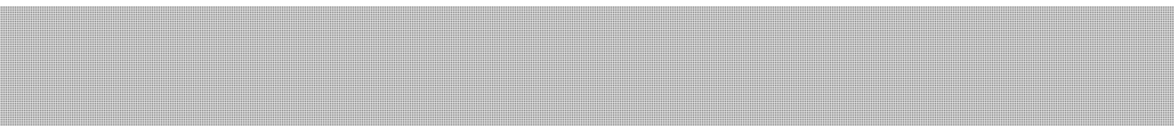
**PROTECTED B**

Dr. S. Keshav  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Keshav:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Towards a High-velocity Permissioned Blockchain", with Huawei Technologies  
Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.



 The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the NSERC Guidelines for External Reviewers. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

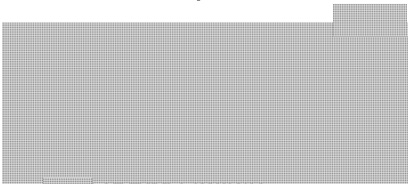
The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$104,200
Year 2				\$104,200
<b>TOTAL</b>				<b>\$208,400</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Roger Delisle  
Manager  
Research Partnerships

Telephone: (613) 943-1386  
Fax: (613) 992-5337  
E-Mail: [Roger.Delisle@nserc-crsng.gc.ca](mailto:Roger.Delisle@nserc-crsng.gc.ca)

RD/gp

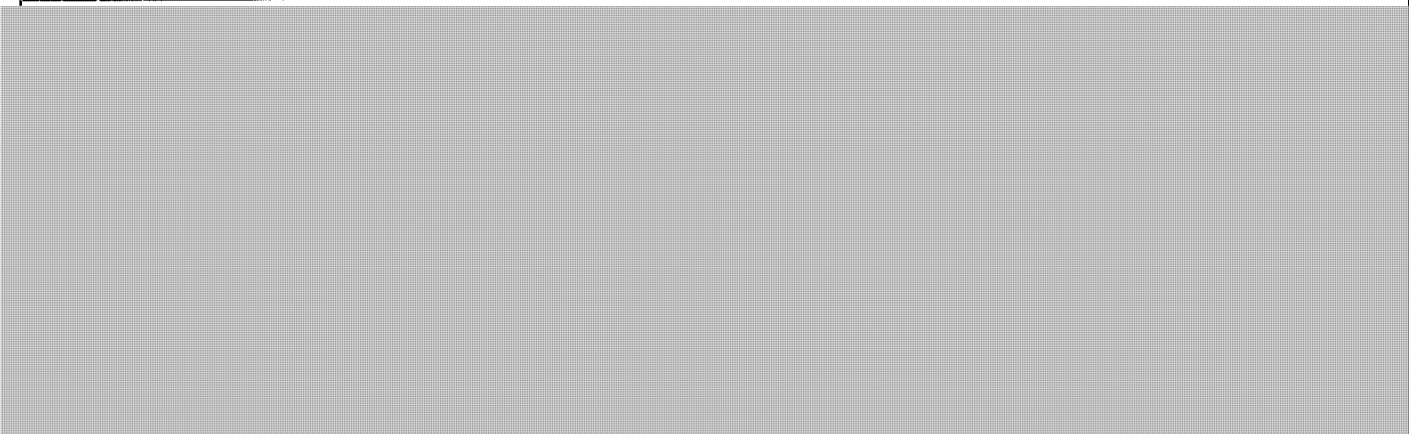
Enclosure

cc: W. Golab, Electrical & Computer Engineering, Waterloo  
B. Wong, Computer Science, David R. Cheriton School of, Waterloo, Waterloo  
[Redacted], Research, Waterloo  
[Redacted] Technologies Co., Ltd.

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Keshav
--	------------------------------------

**INTELLECTUAL PROPERTY**

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350 Albert Street  
Ottawa, Canada  
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350, rue Albert  
Ottawa, Canada  
K1A 1H5

May 3, 2019

File: CRDPJ 539433 - 19

Dr. G. Labahn  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Labahn:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Searching Documents with Text and Mathematical Content Using a Pen Based Interface", with Huawei Technologies Co., Ltd.**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks.

NSERC will attempt to reach a funding decision within three to five months of receipt of a complete application and where no additional issues are raised during the peer review process. I will keep you informed of any significant delays.

NSERC strongly recommends that a research agreement between the university and the partner(s), compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. You are therefore encouraged to start discussions with your partner(s) as soon as possible.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,



Andrei Ionescu  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: 613-992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

Al/ph

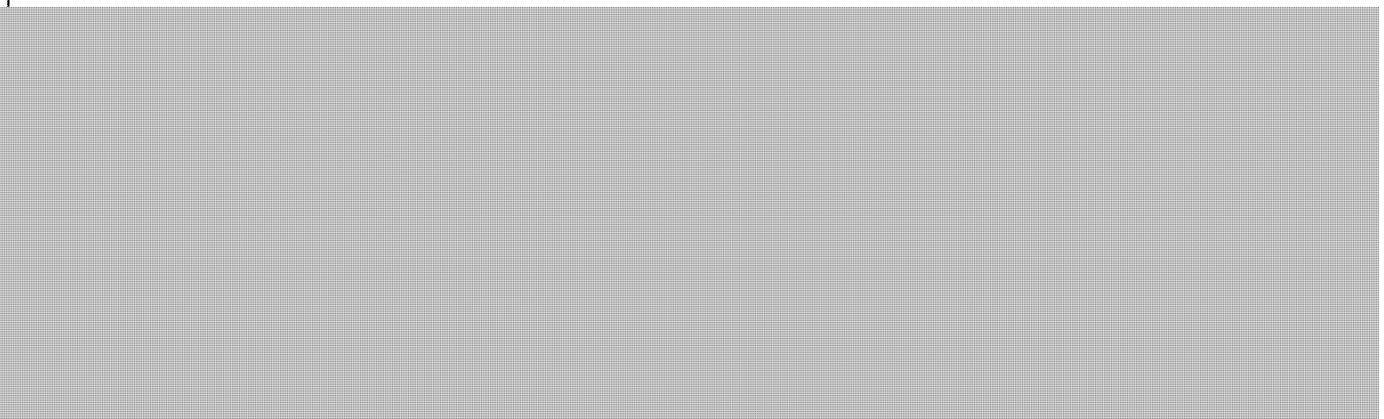
Cc: F.W. Tompa, Computer Science, David R. Cheriton School of, Waterloo  
Research, Waterloo  
Huawei Technologies Co., Ltd.



Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Labahn
--	------------------------------------

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350 Albert Street  
Ottawa, Canada  
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350, rue Albert  
Ottawa, Canada  
K1A 1H5

May 8, 2019

File: CRDPJ 541942 - 19

Dr. D.J. Lie  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Lie:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Mitigating Software Vulnerabilities with Architectural Support for Type-safety", with Huawei Technologies Co., Ltd.**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks.

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NSERC strongly recommends that a research agreement between the university(ies) and the partner(s), compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. You are therefore encouraged to start discussions with your partner(s) as soon as possible.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,



Andrei Ionescu  
Manager  
Research Partnerships

Telephone: (613) 943-7604  
Fax: 613-992-5337  
E-Mail: Andrei.Ionescu@nserc-crsng.gc.ca

Al/ph

Cc: [Redacted] Research, Toronto  
[Redacted] Huawei Technologies Co., Ltd.

Personal identification no. (PIN)	Family name of applicant
Valid [REDACTED]	Lie

**INTELLECTUAL PROPERTY**

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[REDACTED]



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350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

April 11, 2019

File: CRDPJ 538476 - 18

Dr. X. Shen  
Department of Electrical and  
Computer Engineering  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Shen:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Proactive User-Centric Networking for Next Generation Wireless Communications", with Huawei Technologies Co., Ltd.**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

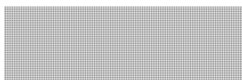
I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks.

NSERC will attempt to reach a funding decision within three to five months of receipt of a complete application and where no additional issues are raised during the peer review process. I will keep you informed of any significant delays.

NSERC strongly recommends that a research agreement between the university(ies) and the partner(s), compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. You are therefore encouraged to start discussions with your partner(s) as soon as possible.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,



Rémy Chabot  
Manager  
Research Partnerships

Telephone: (613) 996-4944  
Fax: 613-992-5337  
E-Mail: Rémy.Chabot@nserc-crsng.gc.ca

RC/ph

Cc: W. Zhuang, Electrical & Computer Engineering, Waterloo, K.L. Moran, Research, Waterloo  
Huawei Technologies Co., Ltd.

Personal identification no. (PIN)

Family name of applicant

Valid

Shen

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



The main body of the Intellectual Property section is a large, empty rectangular box with a thin black border, intended for the applicant to provide details on their plans for protecting and disposing of intellectual property.

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Please free to reply in the official language of your choice.  
*N'hésitez pas à me répondre dans la langue de votre choix.*

---

**From:** Ivan, Marius  
**Sent:** February-22-19 10:49 AM  
**To:** Terfa Dibaba, Talile  
**Subject:** FW: Conditional NSERC CRD award - CRDPJ 533529-18 - Dr. Lampe

Hi Talile,

Could you please prepare the Award Letter for this CRD, with start date April 1st?

Thank you,  
Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**  
Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG  
[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5  
Tel. 613-996-0923  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)



BREAKTHROUGH ANSWERS TO TIMELESS QUESTIONS  
DES RÉPONSES INNOVANTES À DE GRANDES QUESTIONS

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [Redacted]  
**Sent:** Wednesday, February 20, 2019 7:16 PM  
**To:** Ivan, Marius  
**Cc:** [Redacted]  
**Subject:** Conditional NSERC CRD award - CRDPJ 533529-18 - Dr. Lampe

Dear Marius,

Re: NSERC #CRDPJ 533529-18 (UBC/Lampe #F18-04762)

[Redacted]

[Redacted]

[Redacted]



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

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naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

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s.20(1)(c)

January 29, 2019

File: CRDPJ 533529 - 18

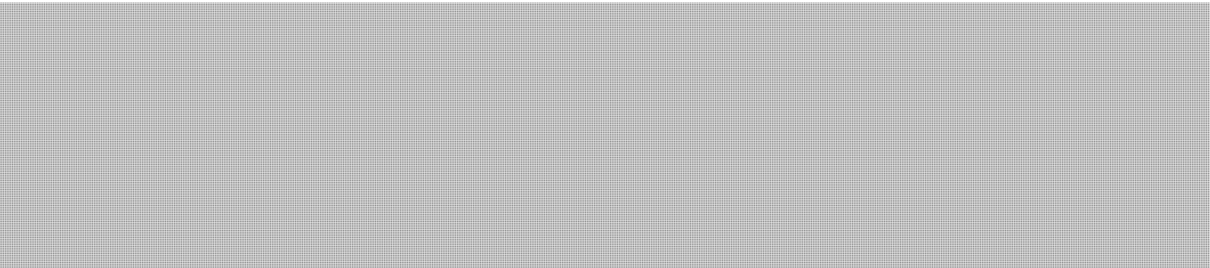
**PROTECTED B**

Dr. L. Lampe  
Dept. of Electrical & Comp. Engineering  
University of British Columbia  
FRED KAISER BUILDING  
2332 MAIN MALL RM 4041  
VANCOUVER BC V6T 1Z4

Dear Dr. Lampe:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Algorithms and Architecture for Super Terabit Flexible Multicarrier Coherent Optical Transmission", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of British Columbia.



The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner to this project are summarized below.

	<b>Original Amount Requested</b>	<b>Partner Cash</b>	<b>Partner In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$70,917
<b>Year 2</b>				\$110,916
<b>Year 3</b>				\$86,917
<b>TOTAL</b>				\$268,750

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

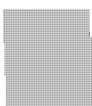




Marius G. Ivan, PhD  
Manager  
Research Partnerships

Telephone: (613) 996-0923  
Fax: (613) 992-5337  
E-Mail: [Marius.Ivan@nserc-crsng.gc.ca](mailto:Marius.Ivan@nserc-crsng.gc.ca)

MGI/ttd

Enclosure

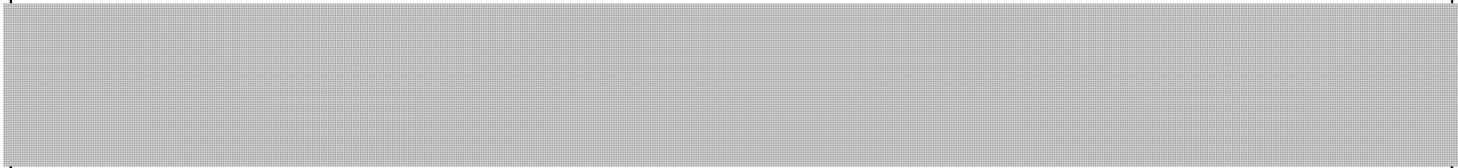
cc:  Electrical and Computer Engineering, British Columbia, British Columbia  
 Research, British Columbia  
 Huawei Technologies Co., Ltd.



Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Lampe
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**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



The main body of the page is a large, empty rectangular box with a thin black border, intended for the applicant to provide details on intellectual property protection and disposal plans.

Ivan, Marius

---

**From:** [redacted]  
**Sent:** Tuesday, March 12, 2019 12:51 PM  
**To:** Ivan, Marius  
**Cc:** [redacted]; Terfa Dibaba, Talile; Jodoin, Joelle  
**Subject:** RE: NSERC CRDPJ 534030-18 for Prof. Sargent with Huawei - START DATE REQUEST

Wonderful, thank you!

[redacted]

Innovations & Partnerships Office  
University of Toronto  
100 College Street, Suite [redacted]  
Toronto, Ontario M5G 1L5

[redacted] | [redacted]  
[www.research.utoronto.ca](http://www.research.utoronto.ca)

---

**From:** Ivan, Marius <[Marius.Ivan@NSERC-CRSNG.GC.CA](mailto:Marius.Ivan@NSERC-CRSNG.GC.CA)>  
**Sent:** Tuesday, March 12, 2019 12:40 PM  
**To:** [redacted]  
**Cc:** [redacted]; Terfa Dibaba, Talile <[TerfaDibaba@NSERC-CRSNG.GC.CA](mailto:TerfaDibaba@NSERC-CRSNG.GC.CA)>; Jodoin, Joelle <[Joelle.Jodoin@NSERC-CRSNG.GC.CA](mailto:Joelle.Jodoin@NSERC-CRSNG.GC.CA)>  
**Subject:** RE: NSERC CRDPJ 534030-18 for Prof. Sargent with Huawei - START DATE REQUEST

Dear [redacted],

We will start working on the award letter with start date April 1<sup>st</sup> 2019, and will let you know when it is released.

Best,  
Marius

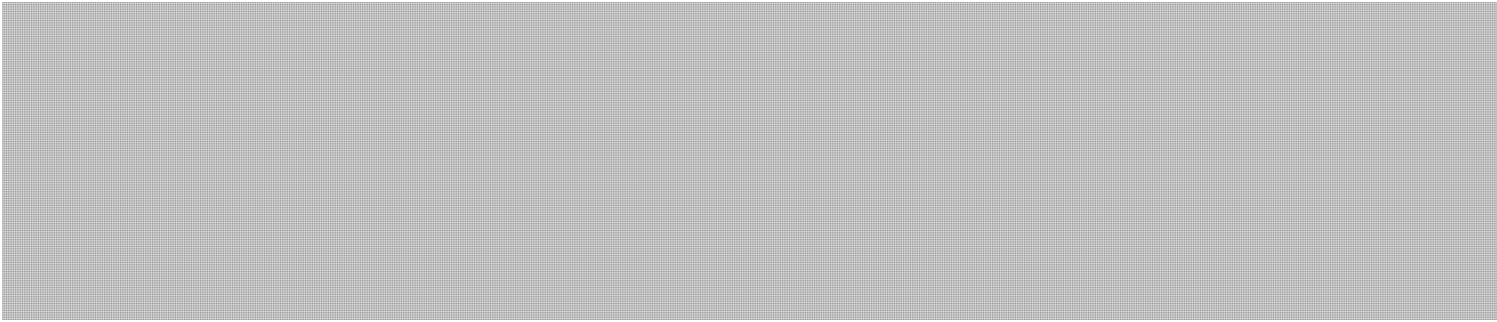
**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**  
Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG  
[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5  
Tel. 613-996-0923  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [redacted] [[mailto:\[redacted\]](mailto:[redacted])]  
**Sent:** Tuesday, March 12, 2019 12:24 PM  
**To:** Ivan, Marius  
**Cc:** [redacted]  
**Subject:** NSERC CRDPJ 534030-18 for Prof. Sargent with Huawei - START DATE REQUEST

Dear Marius,



Thank you,



Innovations & Partnerships Office  
University of Toronto  
100 College Street, Suite 413  
Toronto, Ontario M5G 1L5



[www.research.utoronto.ca](http://www.research.utoronto.ca)



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

March 4, 2019

File: CRDPJ 534030 - 18

**PROTECTED B**

Dr. H. Sargent  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Sargent:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Hybrid perovskite integrated electro-optic modulator", with Huawei  
Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Toronto.

reporting and payment schedules.

The start date establishes the

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				
Year 2				\$230,223
Year 3				\$230,223
TOTAL				\$690,669

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

Marius G. Ivan, PhD  
Manager  
Research Partnerships

Telephone: (613) 996-0923  
Fax: (613) 992-5337  
E-Mail: [Marius.Ivan@nserc-crsng.gc.ca](mailto:Marius.Ivan@nserc-crsng.gc.ca)

MGI/ttd

Enclosure

cc: D.S. Seferos, Chemistry (St. George Campus), Toronto, Toronto  
Research, Toronto  
Huawei Technologies Co., Ltd.

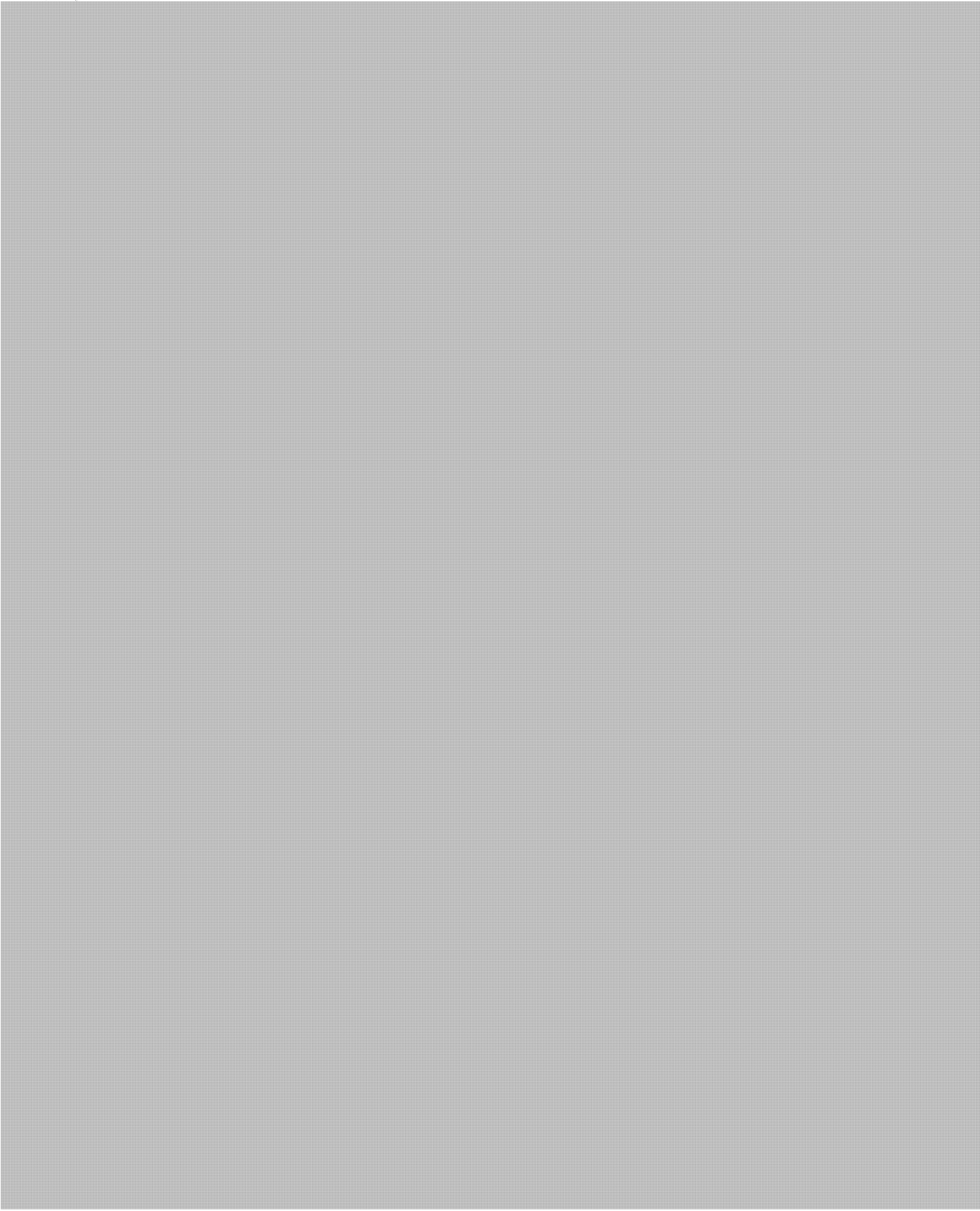
s.19(1)

s.20(1)(b)

s.20(1)(c)

Edward Sargent

PIN #



Personal identification no. (PIN)

Family name of applicant

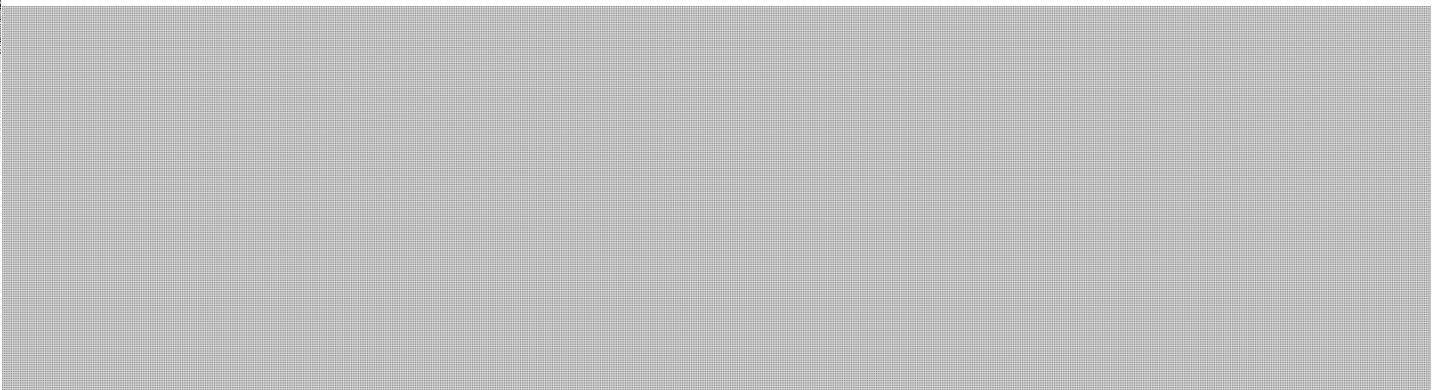
**Valid**



Sargent

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



### **Benefits for Canada**

In addition to the benefits anticipated for the partner(s) described under the Industrial Relevance and Benefits criterion, the proposal must detail any additional economic, social or environmental benefits for Canada and Canadians, as well as credibly explaining any advantages Canada stands to gain from the planned partnership(s).

- Are there indications of any barriers to the realization of benefits (partner composition, intellectual property arrangements, etc.)?
- Does the scope of such benefits include broader advantages for Canadian industry at large, as well as valuable support to sustaining or developing Canadian expertise?
- 

*Is it likely that the benefits to Canada and Canadians outlined in the research proposal will be realized?*

### **Benefits to the University and Appropriateness of the Setting**

The proposal must demonstrate what additional benefits are to be accrued by the University in the upcoming term and the extent of the support provided to the researcher.

#### **Benefits to the university**

- Has the university demonstrated how the proposed research program fits in its strategic plan? To what extent will this IRC contribute to the growth of a sustainable research activity that will generate results of scientific and industrial relevance, enhance training, and stimulate academic collaborations and interactions with the



**Page 218**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 219**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**19(1), 20(1)(b), 20(1)(d)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Ivan Marius

---

**From:** [REDACTED]  
**Sent:** June 5, 2019 8:14 AM  
**To:** Ivan, Marius; [REDACTED]  
**Cc:** Jodoin, Joelle  
**Subject:** RE: Research Agreement for your IRC

[REDACTED]  
[REDACTED]

Dear Marius,

[REDACTED]

Have a nice day!  
Best Regards,

[REDACTED]

**From:** Ivan, Marius [mailto:Marius.Ivan@NSERC-CRSNG.GC.CA]  
**Sent:** June 4, 2019 2:28 PM  
**To:** [REDACTED]; [REDACTED]  
**Cc:** Jodoin, Joelle <Joelle.Jodoin@NSERC-CRSNG.GC.CA>  
**Subject:** RE: Research Agreement for your IRC

Hi [REDACTED]

Thank you for getting back to us so quickly, much appreciated.

Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG  
[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5  
Tel. 613-996-0923  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [REDACTED]  
**Sent:** Tuesday, June 04, 2019 2:03 PM  
**To:** Ivan, Marius; [REDACTED]  
**Cc:** Jodoin, Joelle  
**Subject:** Re: Research Agreement for your IRC

[REDACTED]

[REDACTED]

----- Original message -----

From: "Ivan, Marius" <[Marius.Ivan@NSERC-CRSNG.GC.CA](mailto:Marius.Ivan@NSERC-CRSNG.GC.CA)>

Date: 2019-06-04 2:00 PM (GMT-05:00)

To: [REDACTED]

Cc: [REDACTED]; "Jodoin, Joelle" <[Joelle.Jodoin@NSERC-CRSNG.GC.CA](mailto:Joelle.Jodoin@NSERC-CRSNG.GC.CA)>

Subject: Research Agreement for your IRC

Dear [REDACTED]

Best,

Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG

[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5

Tel. 613-996-0923

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

Ivan Marius

---

**From:** Jodoin, Joelle  
**Sent:** June 4, 2019 1:44 PM  
**To:** Ivan, Marius  
**Subject:** RE: Profil de chaire - Tho Le-Ngoc

Hi Marius,

Yes, this is the next step and it is the first thing on my to do list for tomorrow morning.

Here is the IP checklist to complete for this IRC once the agreement is received:  
<http://enterprise/enterprise/llisapi.dll?func=ll&objId=50987470&objAction=viewheader>

Thanks!  
Joelle

**Joelle Jodoin**

**Program Assistant | Ajointe de programme**

Manufacturing, Communications and Technologies | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

---  
[Joelle.Jodoin@nserc-crsng.gc.ca](mailto:Joelle.Jodoin@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-947-9397  
Facsimile | Télécopieur | 613-992-5337  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

Please feel free to reply in the official language of your choice.  
*N'hésitez pas à me répondre dans la langue de votre choix.*

---

**From:** Ivan, Marius  
**Sent:** Tuesday, June 04, 2019 1:28 PM  
**To:** Jodoin, Joelle  
**Subject:** RE: Profil de chaire - Tho Le-Ngoc

Hi Joelle,

We need to move ahead with the next steps in this IRC. Is the plaque being ordered?

Thanks,  
Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG

Ivan Marius

---

**From:** Ivan, Marius  
**Sent:** June 4, 2019 2:08 PM  
**To:** Jodoin, Joelle  
**Subject:** FW: Research Agreement for your IRC

Hi Joelle,

We do not need to see the IP agreement anymore, a confirmation from the university that it's been signed is enough, so there's no need to fill in the IP Checklist. Please prepare the award letter.

Thanks,  
Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG

[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5

Tel. 613-996-0923

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [REDACTED] Ms. [mailto:[REDACTED]]  
**Sent:** Tuesday, June 04, 2019 2:03 PM  
**To:** Ivan, Marius; [REDACTED]  
**Cc:** Jodoin, Joelle  
**Subject:** Re: Research Agreement for your IRC

Hi Marius,

[REDACTED]

Best,

[REDACTED]

----- Original message -----

From: "Ivan, Marius" <Marius.Ivan@NSERC-CRSNG.GC.CA>

Date: 2019-06-04 2:00 PM (GMT-05:00)

To: [REDACTED]

Cc: [REDACTED], "Jodoin, Joelle" <Joelle.Jodoin@NSERC-CRSNG.GC.CA>

Subject: Research Agreement for your IRC

Duplicate email / Courriel en double

Jodoin, Joelle

---

**From:** Ivan, Marius  
**Sent:** Friday, April 26, 2019 1:04 PM  
**To:** Jodoin, Joelle  
**Subject:** FW: IRC results

Hi Joelle,

Once we receive the confirmation that the RA was signed, and the questionnaire is filled in, and the [REDACTED] you can enter the start date for this IRC as April 1<sup>st</sup>.

Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche

NSERC | CRSNG

[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5

Tel. 613-996-0923

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [REDACTED]  
**Sent:** Friday, April 26, 2019 11:47 AM  
**To:** Ivan, Marius  
**Subject:** RE: IRC results

Dear Marius,

[REDACTED]  
Best Regards,  
[REDACTED]

---

**From:** Ivan, Marius [mailto:[Marius.Ivan@NSERC-CRSNG.GC.CA](mailto:Marius.Ivan@NSERC-CRSNG.GC.CA)]  
**Sent:** April 26, 2019 11:35 AM  
**To:** [REDACTED]  
**Cc:** Jodoin, Joelle <[Joelle.Jodoin@NSERC-CRSNG.GC.CA](mailto:Joelle.Jodoin@NSERC-CRSNG.GC.CA)>  
**Subject:** RE: IRC results

Dear [REDACTED]

[REDACTED]

Best,

Marius

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

**Marius G. Ivan, PhD**  
**Manager| Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships| Partenariats de recherche  
NSERC | CRSNG

[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5

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Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [REDACTED]  
**Sent:** Friday, April 26, 2019 11:27 AM  
**To:** Ivan, Marius  
**Cc:** Jodoin, Joelle  
**Subject:** RE: IRC results

Dear Marius,

Best Regards,

---

**From:** Ivan, Marius [<mailto:Marius.Ivan@NSERC-CRSNG.GC.CA>]

**Sent:** April 26, 2019 11:07 AM

**To:** [REDACTED]  
**Cc:** Jodoin, Joelle <[Joelle.Jodoin@NSERC-CRSNG.GC.CA](mailto:Joelle.Jodoin@NSERC-CRSNG.GC.CA)>  
**Subject:** RE: IRC results

Dear [REDACTED]

Best,

Marius

**Marius G. Ivan, PhD**  
**Manager| Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships| Partenariats de recherche  
NSERC | CRSNG

[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5

Tel. 613-996-0923

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix

---

**From:** [REDACTED]  
**Sent:** Friday, April 26, 2019 10:14 AM  
**To:** Ivan, Marius  
**Subject:** RE: IRC results





Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

April 17, 2019

File: IRCPJ 366566 - 18

**PROTECTED B**

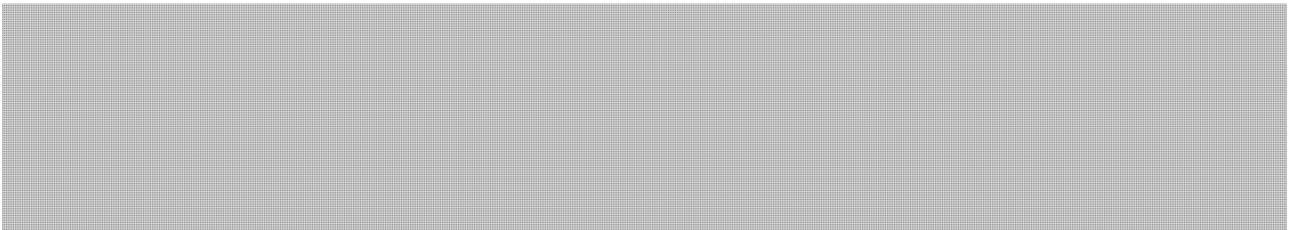
Dr. James Nicell  
Faculty of Engineering  
McGill University  
MACDONALD ENGINEERING BLDG RM [REDACTED]  
817 RUE SHERBROOKE O  
MONTREAL QC H3A 0C3

Dear Dr. Nicell:

**Re: Industrial Research Chairs - Regular - Research (IRCPJ) entitled  
"NSERC/Huawei Technologies Canada Industrial Research Chair in  
Dense Broadband Wireless Access Networks(dBwan)", with Huawei  
Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved the renewal of the NSERC/Huawei Technologies Canada Industrial Research Chair in Dense Broadband Wireless Access Networks(dBwan) at McGill University with Dr. T. Le-Ngoc as Senior Chairholder for a second five-year term. Additional information and conditions for this award are specified in the attached document.

The award is conditional upon:

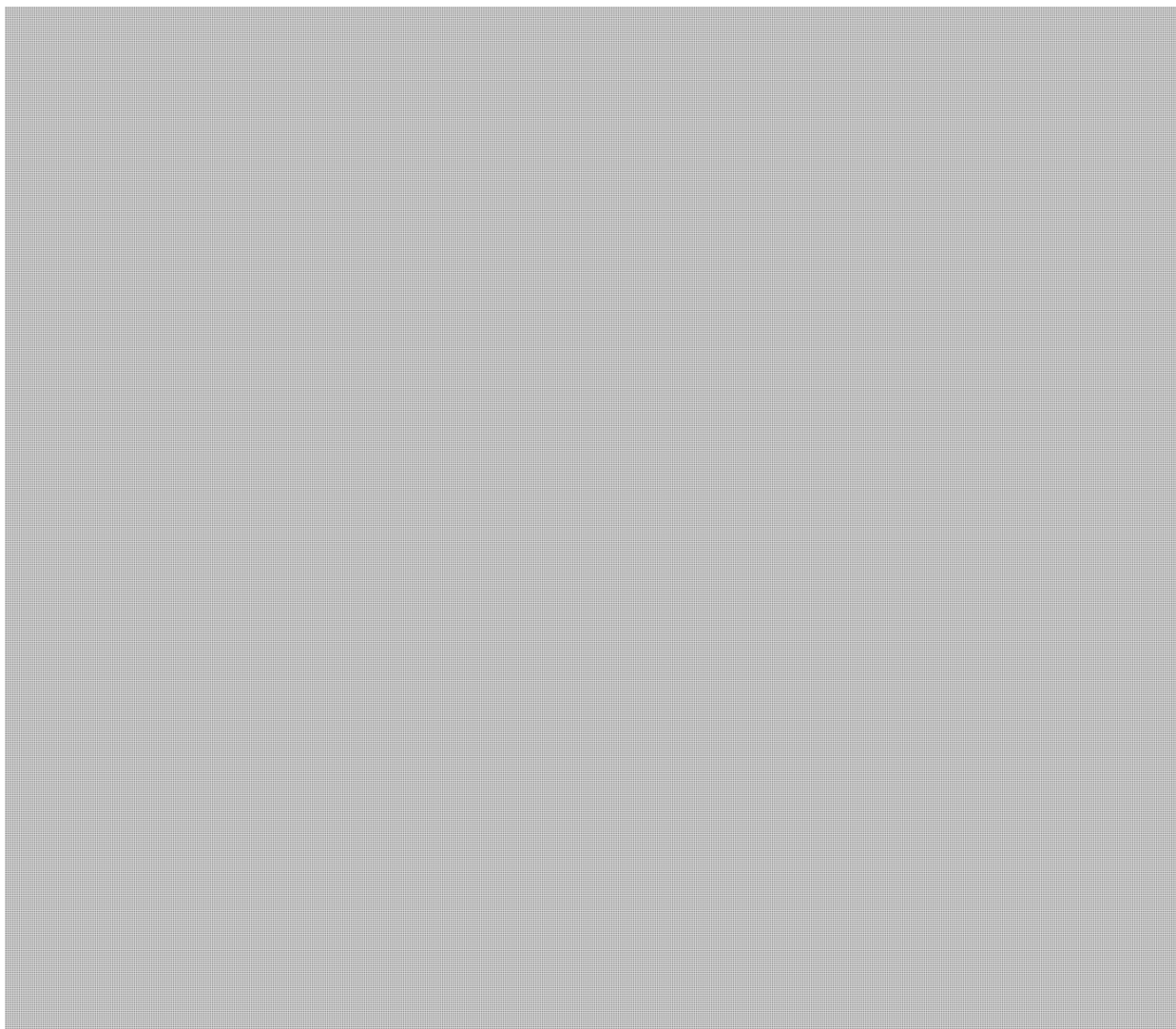


The start date establishes the reporting and payment schedules for this new term.

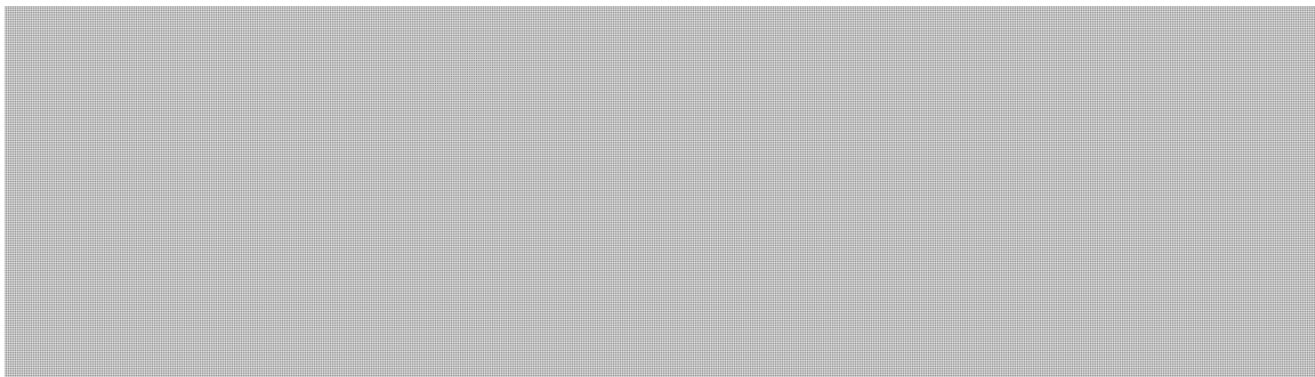
**Once the award is final, NSERC Communications must be consulted if any public announcement is planned for the renewal of the Chair.** General guidelines for announcing major NSERC awards can be found at [http://www.nserc-crsng.gc.ca/\\_doc/NSERC-CRSNG/announce-annonce\\_eng.pdf](http://www.nserc-crsng.gc.ca/_doc/NSERC-CRSNG/announce-annonce_eng.pdf).

I enclose, for your information, a copy of the site visit report and the *NSERC Guidelines for External Reviewers and Site Visit Committee Members*. The site visit report provides comments on the application, in addition to a funding recommendation. If you wish to receive a copy of these documents in the other official language, please inform NSERC.

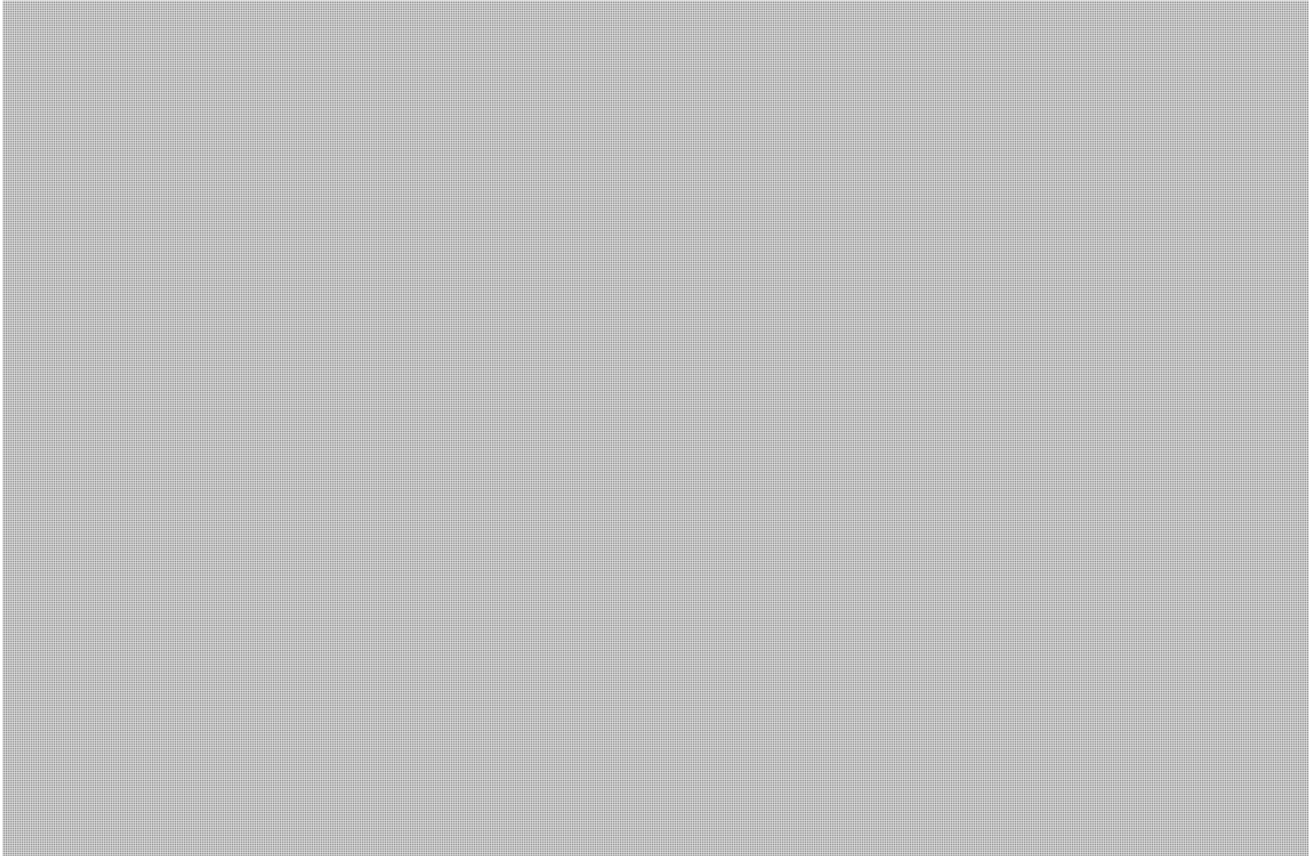
**Industrial Relevance and Benefits**




**Benefit to Canada**



**Conclusion and Recommendation**

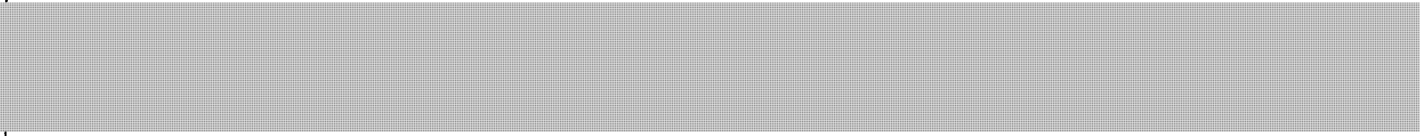


<input checked="" type="checkbox"/> Recommended for funding as requested	
<input type="checkbox"/> Recommended for funding at a reduced level	
Condition to release funds:	<input checked="" type="checkbox"/> [Redacted]
	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Not recommended for funding	

Personal identification no. (PIN)  <b>Valid</b> 	Family name of applicant  Nicell
---	--

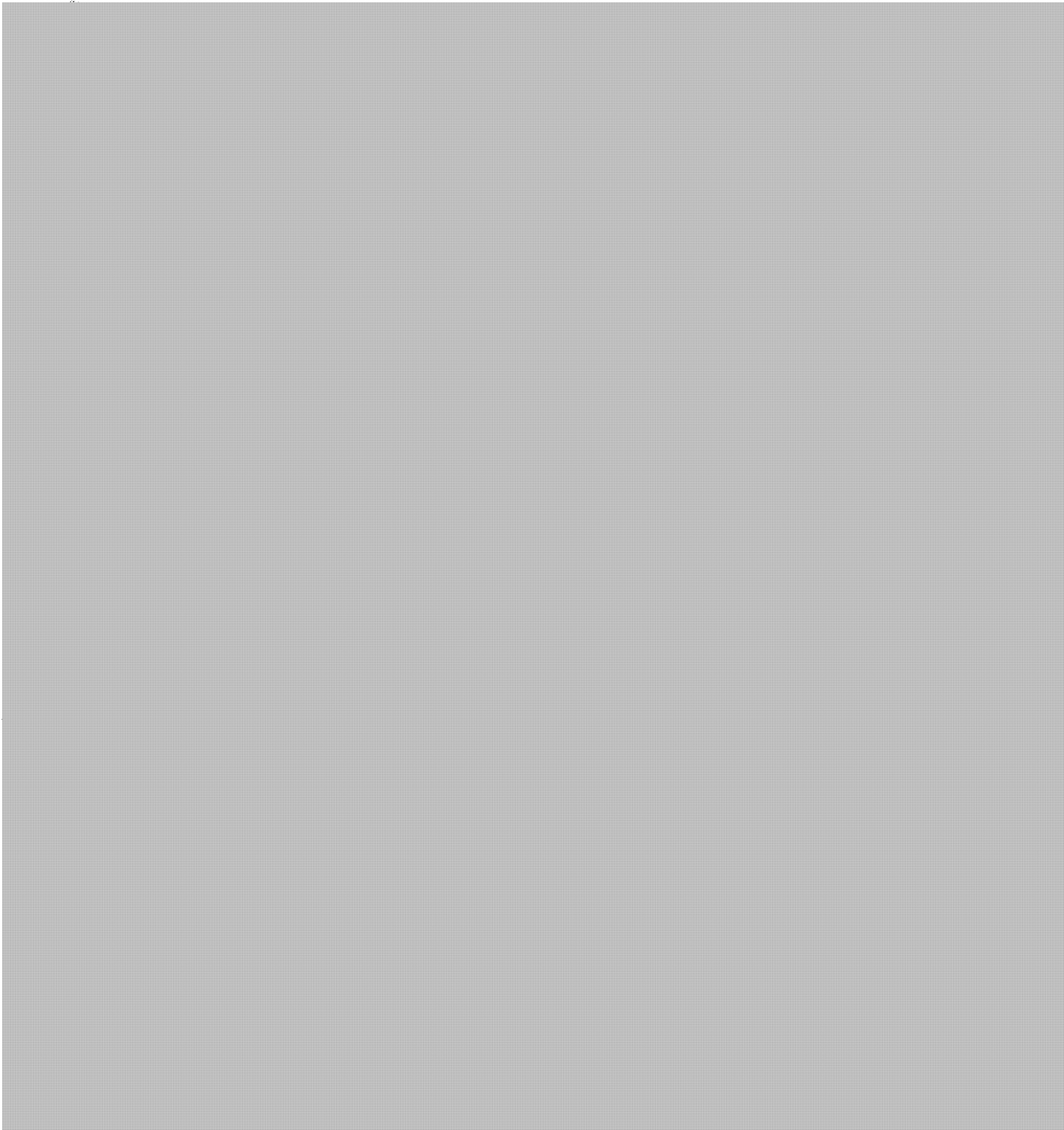
**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

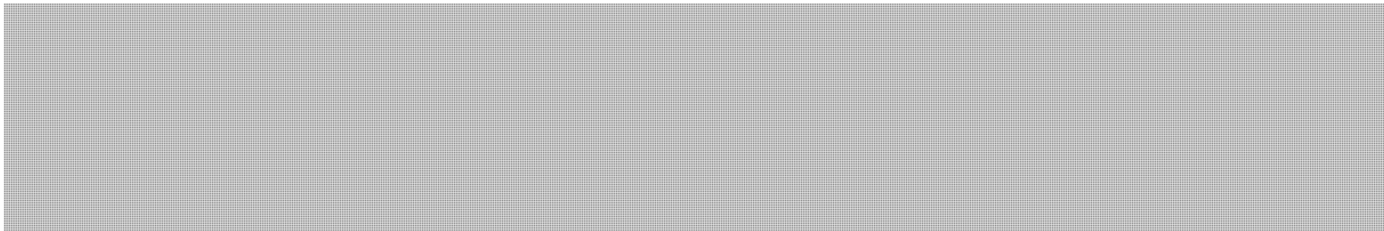


**3.4. PROPOSED WORK PLAN AND MILESTONES:**

**4. PROPOSED COLLABORATIONS:**



**7. VALUE OF THE RESEARCH RESULTS AND BENEFITS TO CANADA:**



**Page 232**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

## IP Checklist

Zhuang, Weihua (CRD 505269-16)

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

### Exclusive option

Update the internal tab in NAMIS and place original IP checklist on file

Start Date:

*March 1st / 2017*

Syllabus  
Manage

*23 Feb. 2017*  
Date



## IP Checklist

A. Chan Carusone, 505827-16

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in NAMIS and place original IP checklist on file

Start Date: MARCH 1<sup>ST</sup> 2017

Sy in La  
Manager

23 Feb. 2017  
Date

9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN)

Family name of applicant

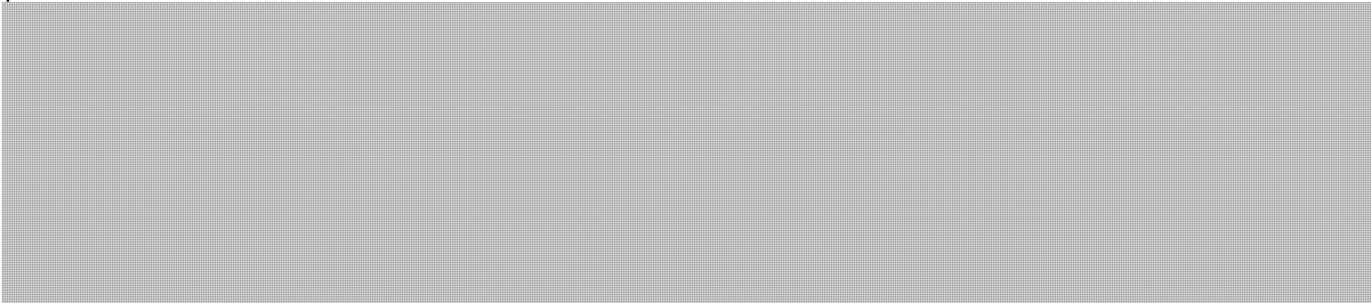
Valid



Chan Carusone

**INTELLECTUAL PROPERTY**

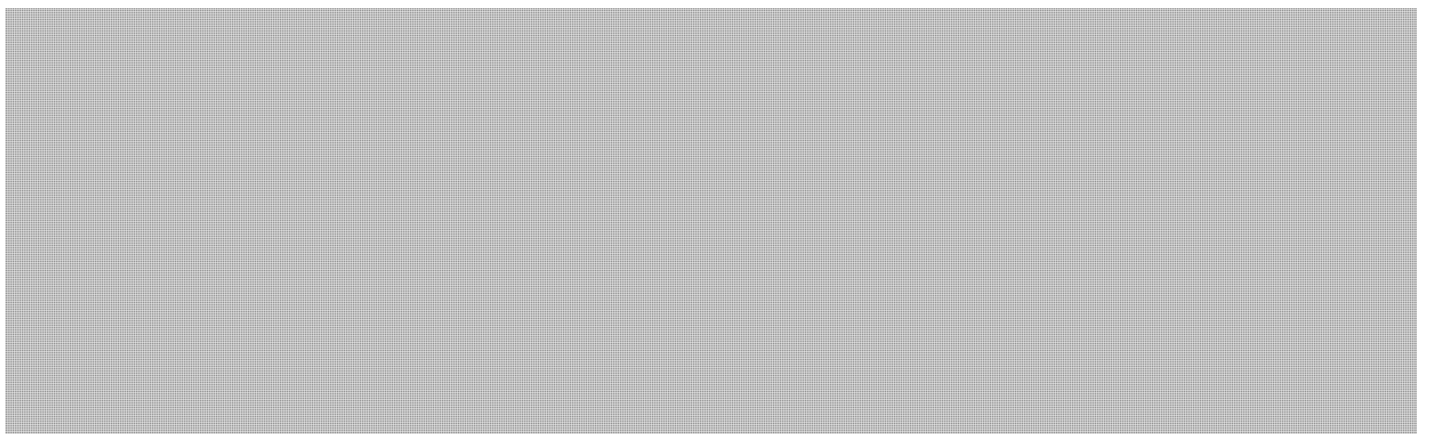
Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant s.20(1)(c)  Ozsu
--	---

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Langlois, Sylvain

---

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Friday, August 23, 2019 1:47 PM  
**To:** Langlois, Sylvain  
**Cc:** NCRN Network Manager  
**Subject:** RE: [Ncrn-board] expanding the University partners in NCRN

Yes, absolutely.

[REDACTED]  
Thanks Sylvain

---

**From:** Langlois, Sylvain <Sylvain.Langlois@nserc-crsng.gc.ca>  
**Sent:** Friday, August 23, 2019 12:04 PM  
**To:** [REDACTED] <[REDACTED]>  
**Cc:** NCRN Network Manager <ncrn-manager@mcgill.ca>  
**Subject:** RE : [Ncrn-board] expanding the University partners in NCRN

Good morning [REDACTED]

Adding them to the IP agreement will be good to protect confidentiality and allow more meaningful involvement.

That being said, if money other than travel to bring to AMG is to be involved, we will need to look at it differently, e.g. making the distal fellows co-applicants.

Sincerely,  
Sylvain.

-----  
**Sylvain Langlois, M.Sc.**

**Manager | Gestionnaire**

Research Partnerships | Partenariats de recherche

Sylvain.Langlois@nserc-crsng.gc.ca

613-995-5667

NSERC | CRSNG

---

**De :** NCRN-Board [ncrn-board-bounces@cim.mcgill.ca] de la part de [REDACTED], Prof. [REDACTED]

**Envoyé :** 15 août 2019 12:22

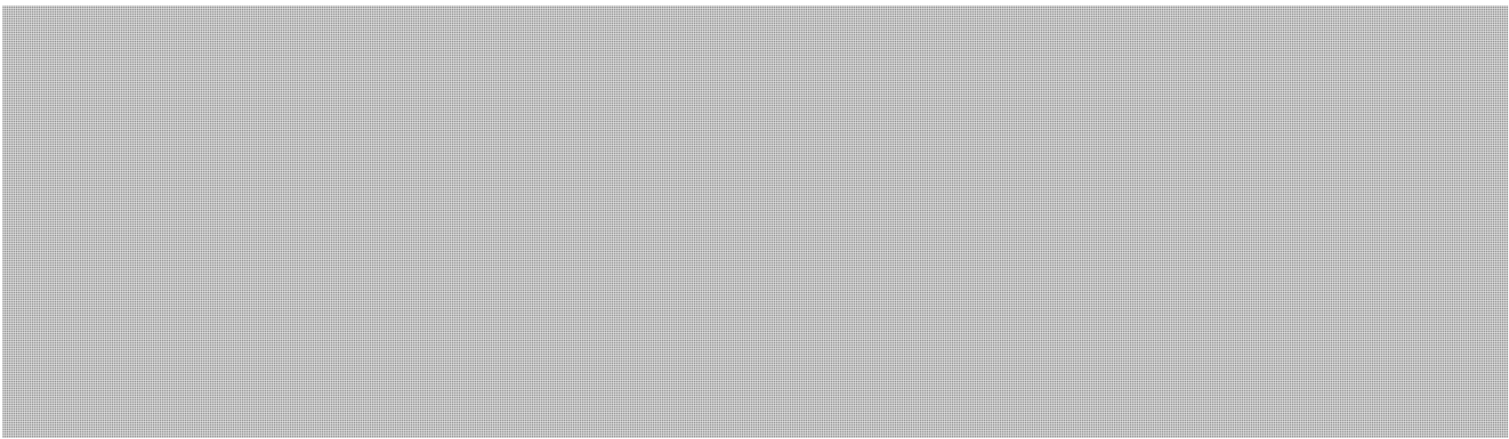
**À :** [Ncrn-board@cim.mcgill.ca](mailto:Ncrn-board@cim.mcgill.ca)

**Cc :** NCRN Network Manager

**Objet :** [Ncrn-board] expanding the University partners in NCRN

Dear members of the board:

[REDACTED]



Thank you



Langlois, Sylvain

---

**From:** [redacted] <[redacted]>  
**Sent:** Tuesday, July 16, 2019 1:00 PM  
**To:** Langlois, Sylvain  
**Cc:** NCRN Network Manager; [redacted]  
**Subject:** RE: phone call

Hello Sylvain  
Let's talk tomorrow morning at 10:30?

[redacted]

Anyway, we can discuss this tomorrow.  
thanks

**From:** Langlois, Sylvain [<mailto:Sylvain.Langlois@nserc-crsng.gc.ca>]  
**Sent:** Tuesday, July 16, 2019 9:57 AM  
**To:** [redacted] <[redacted]>  
**Cc:** NCRN Network Manager <[ncrn-manager@mcgill.ca](mailto:ncrn-manager@mcgill.ca)>; [redacted]  
**Subject:** RE : phone call

Good morning [redacted]

I have this morning, this afternoon at 3:15, or tomorrow 8:30-11:30 or 13:00-3:30, Thursday 13:30-3:30.

Sylvain.

-----  
**Sylvain Langlois, M.Sc.**  
**Manager | Gestionnaire**  
Research Partnerships | Partenariats de recherche  
[Sylvain.Langlois@nserc-crsng.gc.ca](mailto:Sylvain.Langlois@nserc-crsng.gc.ca)  
613-995-5667  
NSERC | CRSNG

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**De :** [redacted]  
**Envoyé :** 9 juillet 2019 12:17  
**À :** Langlois, Sylvain  
**Cc :** NCRN Network Manager; [redacted]  
**Objet :** phone call

Hi Sylvain

[redacted]

## **NSERC CANADIAN ROBOTICS NETWORK (NCRN)**

### **NSERC STRATEGIC NETWORK AGREEMENT**

**BETWEEN**

**THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING / MCGILL UNIVERSITY**, a Canadian university with principal offices at 845 Sherbrooke St. W., Montreal, Quebec, H3A 0G4, and herein acting and represented by its duly authorized representatives, (the "Host University")

**AND**

**THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO**, a Canadian university with principal offices at Banting Institute, 100 College Street, Suite 413, Toronto, Ontario M5G 1L5, and herein acting and represented by its duly authorized representatives,

**AND**

**YORK UNIVERSITY**, a Canadian university with principal offices at 4700 Keele Street, Toronto, Ontario, M3J 1P3, and herein acting and represented by its duly authorized representatives,

**AND**

**UNIVERSITÉ DE SHERBROOKE**, a Canadian university with principal offices at 2500, boulevard de l'Université, Sherbrooke, Québec J1K 2R1, and herein acting and represented by its duly authorized representatives,

**AND**

**QUEEN'S UNIVERSITY AT KINGSTON**, a Canadian university with principal offices at 99 University Avenue, Kingston, Ontario, K7L 3N6, and herein acting and represented by its duly authorized representatives,

**AND**

**UNIVERSITY OF WATERLOO**, a Canadian university with principal offices at 200 University Avenue West, Waterloo, Ontario, N2L 3G1, and herein acting and represented by its duly authorized representatives,

**AND**

**THE GOVERNORS OF THE UNIVERSITY OF ALBERTA**, a Canadian university with principal offices at 86 Avenue 112 Street Northwest, Edmonton, Alberta, T6G 2E1, and herein acting and represented by its duly authorized representatives,

**AND**

**SIMON FRASER UNIVERSITY**, a Canadian university with principal offices at 8888 University Drive, Burnaby, British Columbia, V5A 1S6, and herein acting and represented by its duly authorized representatives.

**AND**

**BARRICK GOLD CORPORATION**, a Canadian corporation with principal offices at 161 Bay Street, Suite 3700, Toronto, Ontario M5J 2S1, and herein acting and represented by its duly authorized representatives,

**AND**

**CLEARPATH ROBOTICS**, a Canadian corporation with principal offices at 148 Manitou Dr., Suite 101B, Kitchener, Ontario, N2C 1L3, and herein acting and represented by its duly authorized representatives,

**AND**

**CROSSWING INC.**, a Canadian corporation with principal offices at 238 Wellington Street East, Suite 214, Aurora, Ontario, L4G 1J5, and herein acting and represented by its duly authorized representatives,

**AND**

**ELEMENT AI INC.**, a Canadian corporation with principal offices at 6650 Rue Saint-Urbain, Montréal, Québec H2S 3G9, and herein acting and represented by its duly authorized representatives,

**AND**

**FPINNOVATIONS**, a Canadian corporation with principal offices at 570 boulevard Saint-Jean, Pointe-Claire, Québec H9R 3J9, and herein acting and represented by its duly authorized representatives,

**AND**

**GENERAL DYNAMICS LAND SYSTEMS**, a Canadian corporation with principal offices at 1991 Oxford Street, London, Ontario N5V 2Z7, and herein acting and represented by its duly authorized representatives,

**AND**

**HUAWEI TECHNOLOGIES CANADA CO. LTD.**, a Canadian corporation with principal offices at 19 Allstate Parkway, Markham, Ontario L3R 5A4, and herein acting and represented by its duly authorized representatives,

**AND**

**KINOVA ROBOTICS**, a Canadian corporation with principal offices at 4333, boul. De la Grande



Allée, Boisbriand, Québec J7H 1M7, and herein acting and represented by its duly authorized representatives,

**AND**

**CANADIAN SPACE AGENCY (CSA)**, a Canadian agency with offices at John H. Chapman Space Centre, 6767 Route de l'Aéroport, Saint-Hubert, Quebec, J3Y 8Y9 and herein acting and represented by its duly authorized representatives,

**AND**

**DEFENCE RESEARCH AND DEVELOPMENT CANADA (DRDC) SUFFIELD**, a Canadian agency with principal offices at PO Box 4000 Station Main, Medicine Hat, Alberta, T1A 8K6, and herein acting and represented by its duly authorized representatives,

**AND**

**NATIONAL RESEARCH COUNCIL**, a Canadian agency with principal offices at TBD, and herein acting and represented by its duly authorized representatives.

**AND**

**OPEN SOURCE ROBOTICS FOUNDATION ("OPEN ROBOTICS")**, a US corporation with principal offices at 170 S. Whisman Blvd., Building D, Suite A, Mountain View, CA, 94041, U.S.A., and herein acting and represented by its duly authorized representatives.

**WHEREAS** McGill University has submitted a grant application entitled "NSERC Canadian Robotics Network" (the "Network") to the Strategic Partnership Grants for Networks program (SPG-N Program), one of the research programs funded by the Natural Sciences and Engineering Research Council of Canada (NSERC);

**AND WHEREAS** NSERC has selected the Network to receive funding under the SPG-N Program;

**AND WHEREAS** a group of University Network Partners have made written commitments to the Network, through letters of support or otherwise (included in Appendix E), for the Network grant application, indicating cash and in-kind contributions to the research activities of the Network;

**AND WHEREAS** a group of Industry Network Partners and Government Network Partners have agreed, through letters of support or otherwise (included in Appendix E), to make a financial contribution to the Network in the form of cash and/or in-kind in return for the rights provided for by this Agreement;

**AND WHEREAS** the Host University will act as the manager of the Network and, on behalf of the Parties, will receive and administer in good faith the NSERC funding and all payments contributed to the Network by the Canadian Industry Network Partners and the Government Network Partners;

**AND WHEREAS** the Parties under this Agreement wish to establish and define their

respective rights, obligations and interests as well as the requisite modus operandi for carrying out the Network.

**ACCORDINGLY**, the Parties agree as follows:

## **SECTION 1: APPENDICES**

1.1 The following Appendices attached hereto form an integral part of this Agreement:

Appendix A: NCRN Network Proposal from NSERC Application

Appendix B: Network Investigator's Acknowledgement

Appendix C: Network Investigator's Student or Team Member Acknowledgement

Appendix D: Network Partner Contact Names and Addresses

Appendix E: NCRN Partner Letters of Support for NSERC Application

Appendix F: NCRN Partner Contributions and Payment Schedules

Appendix G: NCRN Industry Network Partners

Appendix H: NCRN New Partner Accession Form

## **SECTION 2: DEFINITIONS**

2.1 **"Administrative Centre"** means the administrative offices of the Network located at the Host University.

2.2 **"Arising IP"** means, individually and collectively, all new Intellectual Property developed by a Party after the Effective Date as part of Network Research, including any improvement, enhancement or modification to Background IP.

2.3 **"Background IP"** means, individually and collectively, all Intellectual Property developed, produced or obtained by a Party outside of Network Research.

2.4 **"Government Network Partners"** means Canadian Space Agency (CSA), Defence Research and Development Canada (DRDC) Suffield, and the National Research Council.

2.5 **"Industry Network Partners"** means Canadian corporations listed in Appendix G.

2.6 **"Intellectual Property"** means inventions, patents, copyrights, trademarks, computer

programs, or technical information that are first produced or obtained by a Party.

2.7 **"Lead Party"** means the Network Partner leading the protection and commercialization of the Arising IP, whether solely on its own behalf, or in the case of joint Arising IP, on behalf of two or more Network Partners.

2.8 **"Network Funds"** means all funds managed by the Network, including the NSERC funds, funds provided by Network Partners and funds provided by other sources in support of the activities of the Network.

2.9 **"Network Investigator"** means a person employed or given academic status by a University Network Partner who is responsible for a specific aspect of Network Research and who has been accepted as an investigator in the Network by the Board of Directors of the Network and who has signed Appendix B or B1 (for Network Investigators employed by the Governors of the University of Alberta).

2.10 **"Senior Network Manager"** means the person identified in Appendix D who is appointed by the Board of Directors upon recommendation of the Scientific Director to carry out the administration of the Network and to assist the Scientific Director in the day-to-day operations of the Network.

2.11 **"Network Partner"** means an Industry Network Partner, Government Network Partner or University Network Partner that directly or indirectly supports Network Research or other activities of the Network.

2.12 **"Network Research"** means research projects carried out under the supervision of Network Investigators and to which the Board of Directors has allocated funding.

2.13 **"Offer"** means an exclusive three (3) month option to acquire a royalty-bearing, non-exclusive, Field of Use license.

2.14 **"Parties" and "Party"** means the University Network Partners, the Industry Network Partners and the Government Network Partners collectively or individually.

2.15 **"Revenue"** means the gross amount or fair market value of all royalties, fees, equity participation, or any other form of benefit flowing from the licensee to the licensing Party or the joint licensing Parties, excluding only the Goods and Service Tax and similar taxes.

2.16 **"University Network Partners"** means the Host University, The Governing Council of the University of Toronto, York University, Université de Sherbrooke, Queen's University at Kingston, University of Waterloo, The Governors of the University of Alberta, and Simon Fraser University.

### **SECTION 3: PURPOSE**

3.1 The Parties intend to contribute, each in its area of expertise, to the development and

advancement of the knowledge and expertise under the Network initially entitled, "NSERC Canadian Robotics Network", whose network proposal is described in Appendix A. The Network Research undertaken hereunder will contribute for the most part to a fundamental knowledge base in the defined areas of interest.

#### **SECTION 4: FRAMEWORK**

4.1 Each Party agrees to act at all times in such a way as to give full effect to the provisions of this Agreement.

4.2 Each Party represents that to the best of its knowledge, it is under no obligation, contractual or otherwise, that is conflicting or inconsistent in any respect with the terms of this Agreement, or that would impede the diligent and complete fulfillment of its obligations hereunder.

#### **SECTION 5: NETWORK GOVERNANCE**

5.1 The Parties agree that the management and administrative structure of the Network shall be composed of the Board of Directors, the Steering and Scientific Review Committee (SSRC), the Scientific, Industrial and Government Advisory Board (SIGAB), the NCRN Administration, and the Technology Transfer and Targeted Research Committee (T3RC) whose roles and responsibilities are outlined in Appendix A (see Appendix A, sections 11.2 and 11.3).

#### **SECTION 6: COMMITMENT OF THE PARTIES**

6.1 Each Party agrees to participate in the Network in accordance with the commitments and procedures stipulated herein and to act with due professionalism and diligence in order to facilitate the progress and achievement of the objectives of the Network.

6.2 Financial Obligations. Each Network Partner shall:

6.2.1 hold Network Funds in trust to be used exclusively for the purposes of Network Research and other related Network activities;

6.2.2 keep proper accounts, records and supporting documentation for a period of 6 years from the date of expenditure of Network Funds;

6.2.3 University Network Partners will ensure that adequate financial controls consistent with Tri-Agency regulations and guidelines, including the Tri-Agency Financial Administration Guide (TAFAG), and any rules established by the Board, are maintained with respect to Network Funds. Expenditures must adhere to the terms and conditions relating to NSERC grants, including without limitation the Memorandum of Understanding on the Roles and Responsibilities

in the Management of Federal Grants and Awards to which the University Network Partners are signatories.

6.2.4 when requested by the Senior Network Manager or the Host University, provide financial reports for Network Funds received and administered and supporting documentation for cash and in-kind contributions towards NCRN activities in compliance with NSERC regulations.

6.2.5 provide such other financial information and documentation as may be required by the Senior Network Manager or the Host University to administer Network activities and meet obligations to NSERC;

6.2.6 provide technical reports on progress of their Network Research, in a format prescribed by the Senior Network Manager, to the Senior Network Manager on an annual basis; and

6.2.7 notify the Scientific Director, Senior Network Manager, and Host University if they are unable to respect the commitment of any future funding to the Network as described in the Appendices E and F.

6.3 Other Requirements. Each University Network Partner shall:

6.3.1 obtain in writing an acknowledgement using the form set out in Appendix B or B1 (for Network Investigators employed by the Governors of the University of Alberta Investigators) from each of their respective Network Investigators;

6.3.2 use its reasonable efforts to ensure that the Network Investigator has complied with the requirement that students and all other members of the Network Investigator's research team have entered into the agreement specified in Appendix C or B1 (for students and members of the research team from the Governors of the University of Alberta);

6.3.3 ensure adherence to the Tri-Agency Framework: Responsible Conduct of Research and regulations governing the use of humans, animals and biohazards in the conduct of Network Research.

6.3.4 notify the Scientific Director and the Host University if any of the University Network Partner's Network Investigators become ineligible to hold NSERC funding.

6.4 Obligations of the Host University. The Host University shall:

6.4.1 Administer and, subject to the receipt of sufficient funds from NSERC, Industry Network Partners and Government Network Partners; distribute Network Funds in accordance with the applicable policies and procedures of the Host University and the directions of the Board of Directors. Allocation of funding to the University Network Partners shall be made via award letters to be sent by the Senior Network Manager.

6.4.2 provide accounting and financial reporting to the Senior Network Manager and NSERC and office space for the Administrative Centre; and

6.4.3 in consultation with the Senior Network Manager, generally coordinate all

communications in respect of Network activities with NSERC.

6.5 Each Party agrees to contribute to the Network their respective elements identified in Appendices A, E, and F in accordance with the terms and conditions of this Agreement. For the new Industry Network Partners that join NCRN during the term of this Agreement, their respective contributions are identified in their signed NCRN Accession Agreement according to the terms and conditions of this Agreement.

6.6 Administration of annual cash contributions by, and at, the Industry Network Partners, as described in Appendix F, shall commence on the Effective Date of this agreement. Annual cash contributions must be received at the Host University by January 1<sup>st</sup> of each year during the Agreement term.

Cheques shall be made payable to "**McGill University**" and sent to:

Ms. Elvira Coletta  
Director, Research Financial Management Services  
Financial Services, McGill University  
3465 Durocher Street, Room 308  
Montreal, QC H2X 2C6

6.7. Cash contributions by Government Network Partners shall be subject to execution of separate procurement agreements.

6.8 University Network Partners are permitted to incur costs related to the Network Research prior to the reception of their share of Network Funds. Such costs must be deemed eligible in regard to the NSERC guidelines and the Tri-Agency Financial Administration Guide as interpreted by the rules and policies of NSERC in addition to NCRN spending policies. Funds will be transferred to the University Network Partners upon receipt of Network Funds at the Host University.

6.9 The Industry Network Partners shall be solely responsible for taking the necessary steps to obtain any tax deduction or income tax credit for which it deems itself eligible. However, all Parties agree, upon request from the Industry Network Partner or any other Party, to provide proof of use of any financial contribution made by a given Party.

6.10 In the event of an Industry Network Partner not fulfilling its obligation, the Industry Network Partner might be excluded from NCRN by a formal decision of the NCRN Board of Directors with issuing a Termination Notice to the affected Industry Network Partner as described in the section 9.4 of this Agreement. Appendix G and Appendix D of this Agreement shall be amended accordingly.

## **SECTION 7: CONFIDENTIALITY AND PUBLICATION**

7.1 Confidential Background Information means all business methods, business practices,

business concepts, client lists, information, data, reports, research, know-how, formulae, processes, technology, analyses, notes, interpretations, forecasts, records, documents, agreements, ingredients, methods, procedures, inventions, or ideas which are proprietary to a Party, or any of its affiliates, other than Arising IP, which are not generally available to the public, which are disclosed by one Party to any other Party pursuant to this Agreement, whether in electronic, written, graphic or other tangible form, including physical objects, and which are clearly marked as "Proprietary" or "Confidential" or with an equivalent legend, or in the case of oral information, which are reduced to a written version that is marked as above and given to the receiving Party within twenty (20) days of disclosure. Confidential Background Information shall be maintained in confidence and protected by the receiving Party with at least the same degree of care as it uses to protect its own confidential information, but not less than a reasonable degree of care. Documents marked "return required", or equivalent, shall be returned if not destroyed. Notwithstanding the foregoing, the receiving Party may retain a sealed copy of Confidential Background Information for archival and compliance purposes. Unless specifically licensed, Confidential Background Information shall only be used by the receiving Party to perform work in the course of Network Research and shall not be used for any commercial purpose, or sub-licensed. Unless otherwise agreed to by the Parties, all obligations of confidentiality and restrictions on the use of Confidential Background Information cease to apply five (5) years after the expiration of this Agreement.

7.2 All information that is part of the Arising IP shall be maintained in confidence by all Parties, with at least the same degree of care as they use to protect their own confidential information, but no less than a reasonable degree of care, and, subject to Article 7.5, shall not be disclosed except as required for any patent application and for disclosure to prospective licensees. Unless otherwise agreed to by the Parties, all obligations of confidentiality and restrictions on the use of information that is part of Arising IP shall cease to apply three (3) years from the date of disclosure of such Arising IP to the Administrative Centre.

7.3 Obligations of confidentiality and restrictions relating to publication or diffusion of Confidential Background Information or information that is part of Arising IP, hereinafter collectively referred to as Confidential Information, shall not apply to, and no Party to this Agreement shall be liable for a disclosure to others of Confidential Information that:

- (a) Is already known to the receiving Party to which it is disclosed without breach of the provisions of this Agreement;
- (b) Is or becomes part of the public domain without breach of this Agreement;
- (c) Is lawfully obtained from third parties that have no confidentiality obligations to the disclosing party;
- (d) Is authorized for release by the disclosing party;
- (e) Is independently developed by one Party without reference to Confidential Information provided by the other Party;
- (f) Is required by a court order, or by law, to be released, including in the case of a

Government Network Partner the Access to Information Act, provided that the receiving Party first provides the disclosing Party with notice of such requirements and of its intent to disclose the information.

7.4 Notwithstanding any other provisions of this Agreement, each Party may make public at any time and without prior approval of any other Party, the following information regarding this Agreement: Network Research project title, a research summary for public release suitable for web site and annual report publication subject to confidentiality provisions, cost estimates for the disclosing Party's involvement in the Network, duration, institute or faculty or department involved, and the names of individuals who are Network Investigators.

7.5 The Parties shall give due consideration to the diffusion of scientific knowledge. The following provisions shall apply to any such diffusion:

7.5.1 A Party that wishes to disclose information that is part of the Arising IP prior to the expiration of all obligations of confidentiality and restrictions on the use of that information shall make a written request by providing an electronic copy of the proposed publication to the Administrative Centre and the Network Partners with whom they collaborated (the "Notice"). The reviewing Network Partners shall have sixty (60) days to respond to the request in the form of a request for the delay of publication on the grounds that the proposed disclosure contains Confidential Background Information of the reviewing Network Partner or Arising IP that requires protection. Failure of the reviewing Network Partner to respond to the request within sixty (60) days of receipt of the request shall be construed as that reviewing Network Partner's approval of the request. If the reviewing Network Partner objects to the proposed disclosure, it shall so notify the Network Partner(s) seeking to publish and the Parties shall have a further thirty (30) day period to negotiate in good faith the removal or protection of the reviewing Network Partner's Confidential Background Information or of the Arising IP, and to allow patent applications to be filed, if deemed appropriate for proper protection of the Arising IP.

7.5.2 The terms of this Article 7.5 shall apply to graduate student theses, except that any delay in publication for patent protection shall not be greater than sixty (60) days, starting from the Notice, and shall not interfere with the review and defence of the thesis or the graduation of the student. Notwithstanding the other provisions of this Agreement, students involved in the Network Research shall retain copyright in respect to their master's theses or doctoral theses.

7.5.3 All publications and presentations of results of Network Research shall acknowledge the author's participation in the Network and the support of NSERC's SPG-N Program, and shall also refer to industrial support where appropriate (subject to written permission to do so where appropriate as per Article 7.5.1).

## **SECTION 8: INTELLECTUAL PROPERTY OWNERSHIP, PROTECTION, DISCLOSURE, LICENSING AND RESERVED RIGHTS**



## **8.1 OWNERSHIP**

8.1.1 Subject to each Network Partner's ownership rights in Background IP as set forth in Section 8.1.2 below, ownership of Arising IP shall be determined by applicable Canadian law and shall vest in the Network Partner(s) or the Network Investigator(s) according to the policies of the respective Network Partners. Where more than one Network Partner is involved in the development of Arising IP, joint ownership of Arising IP will be decided on the basis of the inventive contribution of each Network Partner to the Arising IP.

8.1.2 Each Network Partner owns all right, title, and interest in and to its Background IP, and no licenses are granted to its Background IP in this Agreement, whether by implication, estoppel or otherwise.

## **8.2 PROTECTION**

8.2.1 The Parties agree that the authority and responsibility for making decisions with regard to patent protection of Arising IP shall rest with the owners of the Arising IP. The following provisions shall apply to any such decision:

8.2.1.1 A Party that is the sole owner of Arising IP may obtain patent protection for the solely owned Arising IP. A sole owner that is unwilling to obtain and maintain patent protection for solely owned Arising IP shall diligently and effectively proceed with patent protection if any other Party undertakes to pay the sole owner's out-of-pocket expenses incurred in obtaining and maintaining the patent.

8.2.1.2 Parties that are joint owners of Arising IP may obtain patent protection for the jointly owned Arising IP. Where there are two or more owners of the Arising IP, they shall designate one of the University Network Partners co-owning the Arising IP as a Lead Party to act on their behalf. Joint owners shall negotiate the costs for patent application and maintenance in respect of the jointly owned Arising IP in accordance with Section 8.4.3.2.

8.2.1.3 A joint owner that is unwilling to obtain and maintain patent protection for jointly owned Arising IP must diligently and effectively proceed with patent protection if:

- (a) the other joint owner(s) undertake(s) to bear all out-of-pocket expenses incurred in obtaining and maintaining the patent, or
- (b) if any other Party (non-joint owner) undertakes to pay the unwilling joint owner's share of all out-of-pocket expenses incurred in obtaining and maintaining the patent.
- (c) In either case, the unwilling joint owner will not share in any revenues derived from the commercialization of the joint Arising IP.

8.2.2 The owner(s) of Arising IP shall be under no obligation to initiate or maintain patent protection of Arising IP that is not licensed exclusively or non-exclusively (other than as provided for in Section 8.5) to an Industry Network Partner.

### 8.3 DISCLOSURE

8.3.1 During the term of this Agreement, when a Network Investigator believes that the results of Network Research have the potential to be commercialized, they shall promptly disclose this in writing to the relevant Office of Technology Transfer of the University Network Partner where the Network Investigator is employed or receives academic status. The Office of Technology Transfer shall confirm that the disclosure is Arising IP, and, to the best of its knowledge, that such Arising IP is not subject to any third-party rights, and shall advise the Administrative Centre of the disclosure as soon as practicable.

8.3.2 The Administrative Centre shall provide written notice to the Network Partners of all Arising IP disclosed pursuant to Article 8.3.1 and subject to Article 7.2.

### 8.4 LICENSING ARISING IP

The following provisions shall apply to the licensing of any Arising IP:

8.4.1 Pursuant to the mandate of NSERC, every reasonable effort must be made to have the results of Network Research exploited in Canada for the benefit of Canadians. Accordingly, the Parties shall act in accordance with the Benefit to Canada Guidelines, as outlined in NSERC's Policy on Intellectual Property.

8.4.2 **Sole Owners.** A Party that is the sole owner of Arising IP is responsible for licensing it. Parties that are sole owners of Arising IP have no obligation to account to the other Parties or share any portion of revenue received on account of the licensing of the solely owned Arising IP.

8.4.3 **Joint Owners.** The following provisions shall apply to the licensing of any Arising IP that is jointly owned:

8.4.3.1 Responsibility for negotiating licenses of jointly owned Arising IP shall lie with the joint owners who shall designate a Lead Party to act on their behalf. The Lead Party shall consult with and obtain approval from the joint owner(s) for a license in respect of the jointly owned Arising IP. A license in respect of jointly owned Arising IP shall be signed by all joint owners of the Arising IP. Approval of any such license and signature thereof shall not be unreasonably withheld.

8.4.3.2 Parties that are joint owners of Arising IP shall negotiate in good faith a sharing agreement with respect to the costs of patent applications and maintenance of patents, as well as any Revenues obtained by licensing the jointly owned Arising IP, based on the respective Parties' inventive contribution, and contribution to the patent costs relating to the licensed Arising IP.

8.4.4 **Offer.** The following provisions shall apply to the rights that Industry Network Partners

have to acquire a license to Arising IP:

8.4.4.1 During the term of this Agreement, the University Network Partner or the Lead Party, hereby grant to the Industry Network Partners, and the Industry Network Partners hereby accept an exclusive Offer to acquire a royalty-bearing non-exclusive license for the commercial use of the Arising IP. This Offer is not a license and does not give the Industry Network Partners the right to commercially use the Arising IP prior to entering into a license agreement.

8.4.4.2 The term of the Offer (the "Offer Period") shall begin on the date that the Administrative Centre provides notification of the Arising IP to the Industry Network Partners and shall end three (3) months later.

8.4.4.3 Neither the University Network Partner nor the Lead Party shall grant any licenses to Arising IP until the expiration of the Offer Period.

8.4.4.4 Exercising the Offer. Any one or more of the Industry Network Partners may exercise their Offer for the Arising IP by providing written notice to the University Network Partner or Lead Party, as the case may be, with a copy to the Administrative Centre, declaring its intent to enter into negotiations for a royalty-bearing license agreement for the Arising IP. If the Offer is exercised, the Industry Network Partner shall have an additional three (3) months, or such additional time as may be agreed upon by the Parties, to conclude negotiations of the license with the owner(s) of the Arising IP. The Parties shall negotiate in good faith to reach commercially reasonable terms and conditions in licensing Arising IP, taking into account contributions made by them to the Network Research project.

8.4.4.5 Non-exclusive Licenses for Arising IP. If by the expiration of the Offer Period one or more Industry Network Partners have expressed an interest in non-exclusive licenses for the Arising IP, the University Network Partner or the Lead Party and the Industry Network Partner(s) shall negotiate in good faith a non-exclusive, royalty-bearing, life-of-patent, field of use license for the Arising IP. All terms and conditions of such license shall be substantially similar for each of the Industry Network Partners.

8.4.4.6 Exclusive Licenses for Arising IP. If by the expiration of the Offer Period, only one of the Industry Network Partners have expressed an interest in a non-exclusive license, that Industry Network Partner shall have the option of negotiating an exclusive, worldwide, royalty-bearing, life of patent, field of use license for the same Arising IP with the University Network Partner or the Lead Party.

8.4.4.7 Right to license to third parties. The University Network Partner or Lead Party may grant to third parties not participating as Industry Network Partners of NSERC Canadian Robotics Network a royalty-bearing license for use of Arising IP on terms to be determined as part of the commercialization plan for that Arising IP, provided that:

(a) if no Industry Network Partners have taken a license, no such offer shall be made until six (6) months from the date of disclosure of the Arising IP to the Industry Network Partners by the Administrative Centre; and

(b) if one or more Industry Network Partner(s) have taken a non-exclusive license, no such offer shall be made before a minimum period of one (1) year from the date of disclosure of the Arising IP to the Industry Network Partners by the Administrative Centre, or before such longer minimum period as may be agreed in the license agreement with the University Network Partner or Lead Party; and

(c) the University Network Partner or Lead Party shall not grant to third parties a license on terms more favorable, when taken as a whole, than those last offered to the Industry Network Partner.

8.4.4.8 The following provisions shall apply to any jointly developed Arising IP:

(a) Should Arising IP be jointly invented by any combination of: a University Network Partner(s), a Government Network Partner(s) and an Industry Network Partner, any Industry Network Partner that co-invented the Arising IP shall be given a time-limited first right to negotiate an exclusive, worldwide, royalty-bearing, life of patent, field of use license for the Arising IP on commercially reasonable terms taking into account the respective parties contributions to the Arising IP.

(b) Should the negotiation in the foregoing clause (a) fail to conclude an exclusive license with the Industry Network Partner within three (3) months from disclosure, or such additional time as may be agreed upon by the Parties, the Arising IP shall be made available for licensing as described above in Sections 8.4.4.1, through 8.4.4.7.

8.4.4.9 Expiration of Offer. Upon termination of this Agreement or dissolution of the Network, whichever is earlier, the Industry Network Partners shall have no residual or other rights in the Arising IP save as provided herein.

8.5 **Reserved Rights.** Notwithstanding any grant of rights above, and subject to Section 7 herein, each of the Network Partner(s) reserves a non-exclusive, royalty-free, perpetual license to use Arising IP solely for its internal research and educational purposes under terms and conditions that will not interfere with efforts to commercialize the Arising IP.

8.6 **No Implied Licenses.** Each Party reserves all rights not expressly granted in this Agreement, and no licenses are granted by any Party under this Agreement, whether by implication, estoppel or otherwise, except as expressly set forth in this Agreement.

## **SECTION 9: DURATION AND TERMINATION**

9.1 This Agreement shall come into force on June 30, 2018 (the "Effective Date"), and shall end five years later, unless earlier extended or renewed by agreement of all Parties, or on dissolution of the Network, whichever comes first, except for provisions concerning Intellectual Property Ownership, Protection, Disclosure, Licensing and Reserved Rights (Section 8), Confidentiality (Section 7) and Disclaimer of Warranty (Section 10) which shall survive termination.

9.2 Each Party shall have the right to terminate their participation in the Network by giving six (6) months prior written notice thereof to the Administrative Centre.

9.3 In the event that the Network determined on the basis of a vote of the Board of Directors that a Party has failed to comply with its obligations set out in this Agreement (the "Defaulting Party"), the Host Institution shall promptly notify the Defaulting Party of the particulars. The Defaulting Party shall have thirty (30) days in which to remedy the default, failing which the participation of the Defaulting Party in the Network will be deemed to have terminated.

9.4 Upon termination of the Agreement with respect to a Party pursuant to Article 9.2 or 9.3, the terminating Party shall:

(a) Pay any contributions and costs predating the notice that were intended to be reimbursable under this Agreement, or return any unspent funds, as applicable. The terminating Party shall be responsible for any obligations that cannot be cancelled. These are to be reviewed and shall be deemed to be reasonable if approved by the members of the Board of Directors

(b) Provide a full and complete report on all aspects of its Network Research up to the date of termination to the Scientific Director after which the terminating Party shall have no further obligations under this Agreement.

9.5 Termination by one Party shall not affect the validity or enforceability of this Agreement by the remaining Parties.

9.6 Any Network Partner who has terminated their participation in the Network during the Agreement term, but wishes to renew their membership during this same term, may be obligated to pay some or all of the missed cash contributions they had committed as of the Effective Date prior to re-entering the Network as a Network Partner.

#### **SECTION 10: DISCLAIMER OF WARRANTY. LIMITATION OF LIABILITY**

10.1 Each Party to this Agreement acknowledges that any and all research results, including information, Intellectual Property and other tangible and intangible materials that it may receive pursuant to this Agreement are to be used with caution and prudence, since all of their characteristics are not known. Each Party disclaims all liability for any damages however arising from another Party's use of such research results. Each Party further acknowledges that such research results, information, Intellectual Property and other tangible or intangible materials are provided without warranty of merchantability or fitness for a particular purpose or any other warranty of any sort, express or implied, and that the provider makes no representations that the use of the same will not infringe any patent or other proprietary right.

10.2 In no event shall any Party be liable to the other for indirect, incidental, consequential, special, punitive, or exemplary damages in any action arising out of or relating to this Agreement, or the breach of any terms thereof, under any theory of law or equity even if that Party has been

advised of the possibility of such damages. This limitation precludes the recovery of loss of use, lost income, lost or anticipated profits, lost revenue or business, and the cost of procuring substitute goods and services. Further, in no event shall any Party be entitled to injunctive relief, except with respect to Intellectual Property and Confidential Information.

## **SECTION 11: AMENDMENTS**

11.1 The terms and conditions set forth in this Agreement, together with the Appendices form the complete agreement between the Parties and shall be binding upon the Parties except as provided for in Article 11.2 and 11.3.

11.2 Appendix D is provided to the Parties for informational purposes and shall be periodically updated by the Administrative Centre and distributed to the Parties. Network Partners should advise promptly the Administrative Centre about any changes in their respective contacts.

11.3 No amendment, modification or waiver of terms of this Agreement shall be effective unless it is in writing, signed by all Parties, and explicitly states the intention to affect this Agreement.

11.4 In the event that a third party is approved by the Board of Director to join the Network (the "New Partner"), the Host Institution shall execute a New Partner Accession Agreement in the form of that provided in Appendix H with the New Partner. A copy of the New Partner Accession Agreement shall be promptly forwarded by the Host Institution to each Network Partner for their records as well as amended Appendix D and Appendix G.

## **SECTION 12: DISPUTE RESOLUTION**

12.1 Disputes that cannot be resolved within ninety (90) days through consultation and discussion shall be submitted to a mutually acceptable mediator chosen by those Parties who are involved in the dispute.

12.2 Disputes which are not resolved by mediation in accordance with Article 12.1 within ninety (90) days shall be submitted to arbitration. The Parties who are involved in the dispute shall each appoint an arbitrator to adjudicate the issue. The arbitrators shall appoint one additional arbitrator, and these arbitrators shall constitute a panel. The arbitration shall be held in a place mutually agreed on by the Parties involved in the dispute. If such parties cannot agree on a place for the arbitration, the arbitration shall be held in a major Canadian city that is relatively equidistant from the Parties involved in the dispute. The panel shall be required to adjudicate the dispute within thirty (30) days of it being submitted for arbitration.

12.3 The decision of the panel shall be binding on the Parties involved in the dispute. The Parties shall each bear their own expenses and shall share the cost of the panel equally unless otherwise awarded by the panel.

### **SECTION 13: GENERAL**

**13.1 Export Controlled Information:** The Parties shall comply with all applicable export control, sanctions, customs and foreign trade regulations ("Export Control Laws and Regulations"

In the event that an Industry Network Partner wishes to include any items and/or information into a Network Research Project which are subject to Export Control Laws and Regulations of USA or Controlled Goods Regulations of Canada ("Controlled Information"), then the Parties agree as follows:

(a) the Industry Network Partner shall promptly notify in writing the Institution's administrative contact in accordance with Schedule 1, "Notices", of the Controlled Information's classification prior to any physical or electronic transmission to the Institution;

(b) the Institution may, at the Institution's sole discretion, accept or reject the delivery of the Controlled Information; and

(c) in the event that the Institution rejects the delivery of the Controlled Information, such rejection by the Institution shall not constitute a breach of this Agreement.

(d) Notwithstanding the above, no Controlled Information subject to International Traffic in Arms Regulations (ITAR) shall be transferred to the Institutions under this Agreement.

The Parties agree that they will not disclose, export, re-export or otherwise transfer – directly or indirectly – any Controlled Information to any foreign national or any foreign country, without prior authorization from the appropriate Canadian or U.S. government authorities.

The Parties shall not be obligated to fulfill this Agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes or other sanctions.

13.2 Nothing in this Agreement shall be construed so as to create a legal relationship of partnership, agency or employment among any of the Parties. Each Party is an independent contractor and is not authorized or empowered to act as agent for any other Party for any purpose, except as explicitly set forth herein.

13.3 Required notices under this Agreement shall be given by prepaid post, email, facsimile or courier to the relevant Party's administrative contact as set for in Appendix D to this Agreement. Notices sent by prepaid post shall be deemed received on the fifth business day following dispatch. Notices sent by facsimile shall be deemed received on the business day following dispatch. Notices sent by courier shall be deemed received when actually received.

13.4 The name or identifying mark of a Party or of its employee shall not be used in any publicity without the prior written approval of an authorized representative of that Party.

13.5 No Party hereto shall assign, directly or indirectly, any right or obligation arising from

this Agreement without the prior written consent of all of the other Parties, which shall not be unreasonably withheld. This Agreement shall inure to the benefit of and be binding upon the Parties and their respective heirs, executors, administrators, successors and permitted assigns.

However, upon written notice to all of the other Network Partners, a Party may assign this Agreement to any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Party, provided that the successor shall be bound as if the successor had been a Party to this Agreement in the first instance.

13.6 This Agreement shall be interpreted in accordance with the laws of the Province of Quebec and the laws of Canada as applied therein.

13.7 Where a Party is delayed in performing or observing a covenant or obligation hereunder which is to be performed or observed by a specific date or within a particular time by reason of excusable delay, the date or period of time by or within which such Party is to perform or observe such covenant or obligation shall be extended by a period of time equal to the duration of the excusable delay. As used herein, "excusable delay" means any delay in the performance or observance by any Party or any obligation of such Party hereunder which occurs as a consequence of or is attributable to any circumstance which is beyond the reasonable control of such Party and which is not caused by any default or act of omission of such Party and is not avoidable by the exercise of reasonable effort or foresight by such Party.

13.8 No failure to enforce any provision of this Agreement shall be construed as a waiver of such provision or a waiver of the right to enforce each and every provision of this Agreement. Waiver of any breach shall not be deemed to be a waiver of any future breach, even if similar in nature.

13.9 The Parties have expressly agreed that this Agreement be drawn up in English. Les Parties ont requis que cette entente soit rédigée en anglais.

13.10 This Agreement may be executed in any number of facsimile counterparts each of which when executed by one of the Parties shall be deemed to be an original and all of which taken together shall constitute one and the same Agreement.

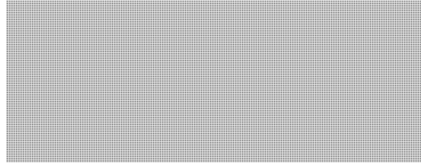
**In witness whereof the Parties hereto have signed as of the Effective Date shown in Article 9.1 above.**

**[The remainder of this page is intentionally left blank. The signature pages follow]**



**THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/MCGILL  
UNIVERSITY**

**By:**



**Date:**

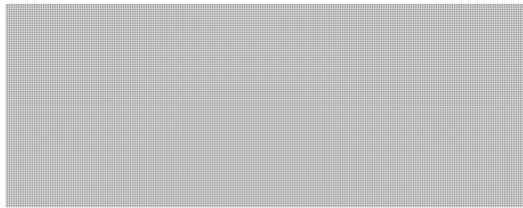
*Jan. 11/2019*

**Name: Martha Crago, PhD, C.M.**

**Title: Vice-Principal (Research and Innovation)**



**By:**



**Date:**

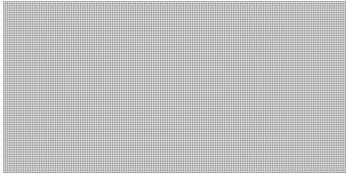
*Jan 15<sup>th</sup> 2019*

**Name: Yves Beauchamp, PhD**

**Title: Vice-Principal (Administration and Finance)**

**THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO**

**By:**



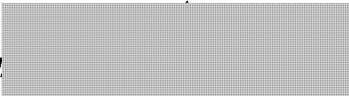
**Date:**

**DEC 18 2018**

**Name: Tina Coccia**

**Title: Director, Partnerships**

YORK UNIVERSITY

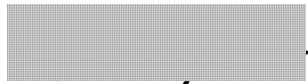
By 

Date: Dec 13/18

Name:

David J. Phipps, Ph.D., MBA  
Director, Office of Research Services  
York University

Title:

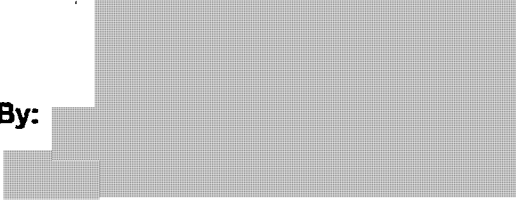
  
Dr. Celia Haig-Brown, Professor  
Associate Vice-President Research

Dec-15/18

REVIEWED BY: 

**UNIVERSITÉ DE SHERBROOKE**

**By:**



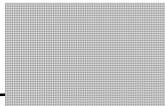
**Date:** *December 18<sup>th</sup>, 2018*

**Name:** Jean-Pierre Perreault

**Title:** Vice-President, Research and Graduate Studies

**QUEEN'S UNIVERSITY AT KINGSTON**

**By:**



Digitally signed by Janice Mady  
DN: cn=Janice Mady, o=Office of  
Partnerships & Innovation, Queen's  
University, ou=Director, Research &  
Innovation Partnerships,  
email=Janice.Mady@QUEENSCA.CA  
Date: 2018.12.18 15:18:56 -0500

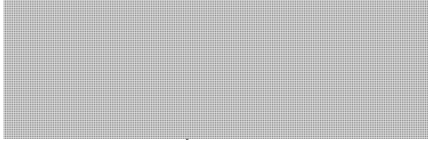
**Date:** December 18, 2018

**Name: Janice Mady**

**Title: Director, Research & Innovation Partnerships**

**UNIVERSITY OF WATERLOO**

**By:**



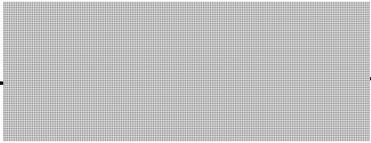
**Date:**

DEC. 12 / 2018

**Name: Lisa Sergovich**

**Title: Grants and Contracts Manager**

**THE GOVERNORS OF THE UNIVERSITY OF ALBERTA**

By: 

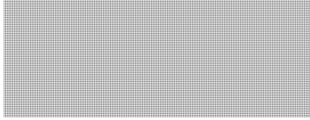
Date: 13/12/18

 Name: Matthias Ruth, PhD

Title: Vice-President (Research)

**SIMON FRASER UNIVERSITY**

**By:**

 \_\_\_\_\_

**Date:** December 11, 2018

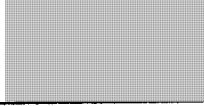
**Name:** Aniko Takacs-Cox

**Title:** Director, Research Services



**BARRICK GOLD CORPORATION**

**By:**



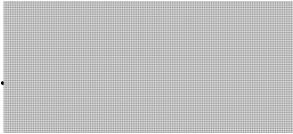
**Date:** 23rd December 2018

**Name:** Michelle Ash

**Title:** Chief Innovation Officer

**CLEARPATH ROBOTICS**

**By:**



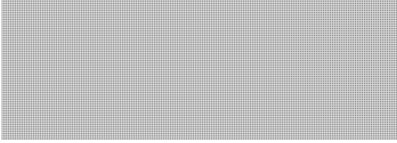
**Date:** 12 December 2018

**Name:** Ryan Gariepy

**Title:** Chief Technology Officer

**CROSSWING INC.**

**By:**



**Date:** 2018-12-17

**Name:** Stephen B. Sutherland

**Title:** President & CEO

DocuSign Envelope ID: E5CCC2E1-4331-42F7-B192-D77E0C86DE9D

**ELEMENT AI INC.**

**By:**  DocuSigned by:  
C8E0BA93DB4945B...

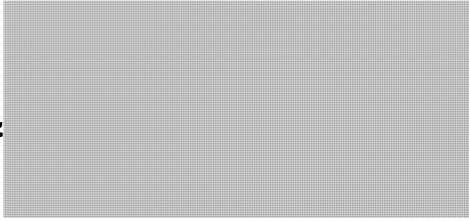
**Date:** 12/20/2018

**Name:** Jean-François Gagné

**Title:** Chief Executive Officer

**FPINNOVATIONS**

**By:**



**Date:**

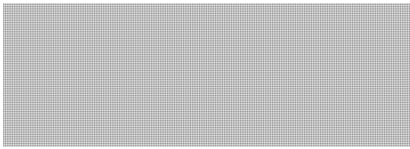
17/12/2018

**Name: Stéphane Renou**

**Title: President and Chief Executive Officer**

**GENERAL DYNAMICS LAND SYSTEMS**

**By:**



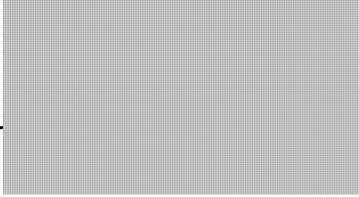
**Date:** 7 Dec 2018

**Name:** Jennifer Wilson

**Title:** Manager, Advanced Procurement

HUAWEI TECHNOLOGIES CANADA CO. LTD.

By: \_\_\_\_\_



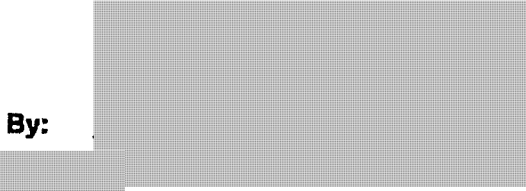
Date: December 18, 2018

Name: Changtian Cai

Title: President, R&D

**KINOVA ROBOTICS**

**By:**



**Date:**

2018-12-18

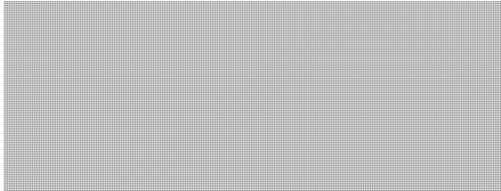
**Name: Keith Blanchet**

**Title: VP Global Sales and Head of Innovation Division**



**CANADIAN SPACE AGENCY**

**By:**



**Date:**

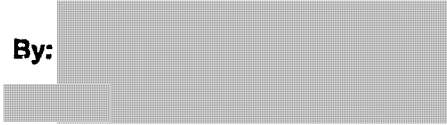
**20 DEC, 2018**

**Name: Marie-Claude Guerard**

**Title: Director General, Space Science & Technology**

**SUFFIELD RESEARCH CENTRE OF DEFENCE RESEARCH AND DEVELOPMENT CANADA (DRDC)**

**By:**



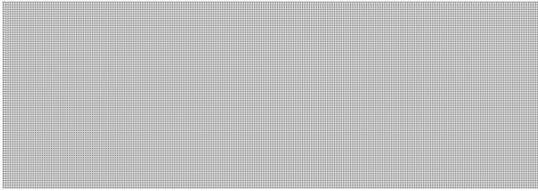
**Date:** 2018-12-11

**Name:** Dr. C. John Anderson

**Title:** Acting Centre Director, DGSTCO

**NATIONAL RESEARCH COUNCIL**

**By:**



**Date:**

**Name: Dr. Ibrahim Yimer**

**Title: Director General, Aerospace Research Centre**

**OPEN SOURCE ROBOTICS FOUNDATION ("OPEN ROBOTICS")**

**By:**  **Date:** 12/20/2018  
D162577E6E8=4EC...

**Name: Brian Gerkey**

**Title: CEO**

**APPENDIX H**

**NCRN FORM OF NEW PARTNER ACCESSION AGREEMENT**

**BETWEEN**

**THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/McGILL UNIVERSITY**, a Canadian university with principal offices at 845 Sherbrooke St. W., Montreal, Quebec, H3A 0G4, and herein acting and represented by its duly authorized representatives, (the "Host University")

**AND**

**(NAME)**, **(description of the organization)** with its head office at **(address)**, and herein acting and represented by its duly authorised representative(s) (hereinafter referred to as the "**New Partner**")

**WHEREAS** the Host Institution has submitted a grant application entitled "NSERC Canadian Robotics Network" (the "**Network**") to the Strategic Partnership Grants for Networks program (SPG-N Program), one of the research programs funded by the Natural Sciences and Engineering Research Council of Canada (NSERC);

**WHEREAS** NSERC has selected the Network to receive funding under the SPG-N Program;

**WHEREAS** the Network Partners have established and defined their respective rights, obligations, contributions and interests as well as the requisite modus operandi for carrying out the Network under an agreement with an effective date of **June 30 2018** (the "**Agreement**");

**WHEREAS** the Network's Board has, in accordance with Section 11.4 of the Agreement, approved the addition of the New Partner in the Network;

**WHEREAS** the parties to the Agreement have authorized the Host Institution to enter into this New Partner Accession Agreement (the "**Accession Agreement**") on behalf of the parties to the Agreement.

**ACCORDINGLY**, the Host University and the New Partner agree as follows:

1. The signature of the New Partner hereto confirms that the New Partner: i) wishes to join the Network; and ii) has read, understood and agrees to be become a Party to the Agreement and to be bound by the terms and conditions of the Agreement.
2. The New Partner has agreed through a letter of support, attached hereto as Schedule 1, to make a contribution to the Network in the form of **(specify cash and in-kind)** in return for the rights provided for under the Agreement.

3. As determined by the Network's Board of Directors, the New Partner shall be bound by the Agreement from ~~XX~~ to the end of the Agreement, or on dissolution of the Network, whichever comes first.
4. All notices, requests, consents and other communications to the New Partner required under the Agreement shall be sent to the New Partner's contact as set forth in Schedule 2 to this Accession Agreement.
5. The preamble and Schedules 1 and 2 hereto form an integral part of this Accession Agreement.

**THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/MCGILL UNIVERSITY**

**By:** \_\_\_\_\_ **Date:**

**Name: Martha Crago, Ph D, C.M.**

**Title: Vice-Principal (Research and Innovation)**

**[NAME OF NEW PARTNER]**

**By:** \_\_\_\_\_ **Date:**

**Name:**

**Title:**

## IP Checklist

Dudek, SPG-N 508451-17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license*	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

\* Only if only one partner is interested

Update the internal tab in NAMIS and place original IP checklist on file *BOM*

Sy \_\_\_\_\_  
M \_\_\_\_\_ anglois

*Feb 21 / 2019*  
Date

Langlois, Sylvain

---

**From:** [REDACTED]  
**Sent:** Thursday, January 31, 2019 3:48 PM  
**To:** Langlois, Sylvain  
**Cc:** [REDACTED]; Moss, Pamela; Boughaba, Samir  
**Subject:** RE: NCRN Network Agreement  
**Attachments:** NCRN Network Agreement\_fully-executed.PDF

Good afternoon Sylvain,

[REDACTED]

Kind regards,

[REDACTED]

[REDACTED] | Office of Sponsored Research  
McGill University | Research and Innovation | James Administration Building, 2<sup>nd</sup> Floor | 845 Sherbrooke Street West | Montréal, QC H3A 0G4 Canada | T: (+1) [REDACTED]  
F: (+1) 514.398.4853 | [REDACTED] | [www.mcgill.ca/research](http://www.mcgill.ca/research)

[REDACTED] | Bureau de la recherche  
Université McGill | Recherche et innovation | Pavillon James Administration, 2<sup>ieme</sup> étage | 845, rue Sherbrooke Ouest | Montréal, QC H3A 0G4 Canada

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*This email may be confidential and privileged. If you have received it in error, please delete it. Si vous recevez le présent courriel par erreur, veuillez l'effacer.*

Devez-vous vraiment imprimer ce courriel ? | Do you really need to print this email?

---

**From:** Langlois, Sylvain <Sylvain.Langlois@nserc-crsng.gc.ca>  
**Sent:** Thursday, December 20, 2018 11:49 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]; [REDACTED]; Moss, Pamela <Pamela.Moss@nserc-crsng.gc.ca>; Boughaba, Samir <Samir.Boughaba@nserc-crsng.gc.ca>  
**Subject:** RE: NCRN Network Agreement

Good morning [REDACTED]

Yes, the end of January 2019 is fine for the signed research agreement.

Happy holidays to you as well,  
Sylvain.

---

**From:** [REDACTED]  
**Sent:** Wednesday, December 19, 2018 11:02 AM  
**To:** Langlois, Sylvain  
**Cc:** [REDACTED]; Moss, Pamela; Boughaba, Samir  
**Subject:** NCRN Network Agreement  
**Importance:** High





Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

October 1, 2018

File: NETGP 508451 - 17  
Fiscal Year: 2018 - 2019

**REVISED**  
**This letter replace the one dated June 29, 2018**

**PROTECTED**

Dr. G.L. Dudek  
School of Computer Science  
McGill University  
MCCONNELL ENGINEERING BLDG RM 419  
3480 RUE UNIVERSITY  
MONTREAL QC H3A 2A7

Dear Dr. Dudek:

**Re: Strategic Partnership Grants for Networks Application entitled "NSERC Canadian Robotics Network", with National Research Council of Canada, Barrick Gold Corporation, FPIinnovations, Defence R&D Canada, Huawei Technologies Co., Ltd., Clearpath Robotics Inc., Kinova, General Dynamics Land Systems - Canada, Canadian Space Agency, CrossWing Inc., Open Source Robotics Foundation Inc., Element AI**

It is my pleasure to inform you that a grant was approved for the above-mentioned application. The award was approved as follows:

**Award Start Date: June 30, 2018**

Year	Awarded Amount	Fiscal Year	Payment Amount	Fiscal Year Total (For NSERC's use)
1	\$1,000,000.00	2018	\$1,000,000.00	\$1,000,000.00
2	\$1,125,000.00	2019	\$933,750.00	
		2020	\$191,250.00	
3	\$1,125,000.00	2020	\$933,750.00	
		2021	\$191,250.00	
4	\$1,125,000.00	2021	\$933,750.00	
		2022	\$191,250.00	
5	\$1,125,000.00	2022	\$933,750.00	
		2023	\$191,250.00	

The Strategic Partnership Grants for Networks Selection Committee based its funding recommendation on input provided by external referees and the report of the Site Visit Committee (SVC). I enclose, for your information, a copy of the Message to Applicant, edited external reviewers' comments, and the edited SVC Report. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act. If you wish to receive a copy of these comments in the other official language, please inform me.

By drawing on the funds provided through this grant or by participating in the activities supported by it, you agree to comply with the following policies and guidelines, and to any amendments to these that NSERC may adopt:

- Section 2 of the *Tri-Agency Framework: Responsible Conduct of Research* (Responsibility of Researchers) posted on the Web site of the Secretariat for Responsible Conduct of Research at <http://www.rcr.ethics.gc.ca/eng/policy-politique/framework-cadre/>;
- the NSERC *Program Guide for Professors* on NSERC's Web site at [www.nserc-crsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes\\_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes_eng.asp); and
- the *Tri-Agency Financial Administration Guide* at [www.nserc-crsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index_eng.asp).

The cash commitments of NSERC and the partner organizations to the network are summarized below.

	NSERC Amount Requested	Partner Eligible Cash	NRC Cash	Partner Eligible In-kind	Amount Recommended
Year 1					\$1,000,000
Year 2					\$1,125,000
Year 3					\$1,125,000
Year 4					\$1,125,000
Year 5					\$1,125,000
TOTAL					\$ 5,500,000

NSERC is releasing the first year grant instalment to the host university with this notice. It is our expectation that these grant funds will be distributed to co-investigators without delay so that network researchers may begin their research immediately.

NSERC expects that the collaborating universities will create network specific accounts for the co-investigators as soon as the network funds arrive so that research can begin as soon as possible.

The expectation is that research will be well underway within six months of the award start date.

**The following conditions must be completed prior to the release of the second grant instalment:**

**Within three months:**

NSERC must approve the Board of Directors' membership before the board can be established. The membership of this Board must reflect the interests and concerns of the public, private and academic sectors involved in the Network. It should include some members not directly affiliated with the Network, stakeholder representatives, a researcher from the Network and the Chair of the Scientific Committee, as well as an NSERC Staff Member as a non-voting member. NSERC retains the right to name additional voting members to the Board to ensure objectivity, and the perception of objectivity, in the management of the Network. The Chair of the Board must not be from any of the participating institutions receiving Network funds.

The Network must hold its initial Board meeting to, at a minimum, approve its mandate and review any recommendations or suggestions to the applicants by the Selection Committee and/or the SVC.

**Within six months:**

The Research Agreement between all participating universities and partner organizations must be signed. NSERC suggests that the host university pattern the research agreement after similar Network research agreements that have been signed in the past. Many of the participating universities will have previously signed Network research agreements and should have copies of these documents.

The release of the second instalment of this grant is conditional upon the satisfactory completion of these conditions. An explanation of how NSERC payments are disbursed, and the conditions that apply to this grant, are described in the enclosed Terms and Conditions of Award. The Grant Summary indicates the dates on which the progress and final reports are due at NSERC. Reminders will be sent to you approximately six weeks before the reports are due.

**To help elevate NSERC's visibility, I encourage you to acknowledge NSERC's support in any dealings that you might have with the media regarding this project. I would also encourage you to add NSERC's logo (visual identifier) to your university Web page(s) that present aspects of this project. The logo can be found here: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle_eng.asp).**

Finally, I would like to take this opportunity to congratulate you and your research team on your successful NSERC Strategic Partnership Grants for Networks proposal.

Do not hesitate to contact Sylvain Langlois at 613-995 5667 or at [Sylvain.Langlois@nserc-crsng.gc.ca](mailto:Sylvain.Langlois@nserc-crsng.gc.ca) if you need any further assistance.

Sincerely,

[REDACTED]  
Katie Wallace  
Acting Director  
Energy, Environment and Resources  
Research Partnerships

AMT/bm

cc: [REDACTED] Research, McGill  
[REDACTED] Finance, McGill  
J.K. Tsotsos, Electrical Engineering & Computer Science, York  
R.M. Jenkin, Electrical Engineering & Computer Science, York  
H. Zhang, Computing Science, Alberta  
I.S. Sharf, Mechanical Engineering, McGill  
D. Kulic, Electrical & Computer Engineering, Waterloo  
[REDACTED] Head Office, Facebook Canada  
J.A. Marshall, Mining Engineering, Queen's  
D.P. Meger, Computer Science, School of, McGill  
R.T. Vaughan, Computing Science, School of, Simon Fraser  
A. Lussier Desbiens, Génie mécanique, Sherbrooke  
S.H.L. Waslander, Mechanical Engineering and Mechatronics, Waterloo  
A.P. Schoellig, Aerospace Studies, Institute for, Toronto  
R. Urtasun, Computer Science (St. George Campus), Toronto, McGill  
I. Mantegh, National Research Council of Canada  
[REDACTED] Barrick Gold Corporation  
[REDACTED] FPIInnovations  
J.A.D. Collier, Defence R&D Canada  
[REDACTED] Huawei Technologies Co., Ltd.  
[REDACTED] Clearpath Robotics Inc.  
[REDACTED] Kinova  
[REDACTED] General Dynamics Land Systems - Canada  
J.C. Piedboeuf, Canadian Space Agency  
[REDACTED] CrossWing Inc.  
[REDACTED] Open Source Robotics Foundation Inc.  
[REDACTED] Element AI  
NSERC Communications  
NSERC Finance



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

June 29, 2018

File: NETGP 508451 - 17  
Fiscal Year: 2018 - 2019

**PROTECTED**

Dr. G.L. Dudek  
School of Computer Science  
McGill University  
MCCONNELL ENGINEERING BLDG RM 419  
3480 RUE UNIVERSITY  
MONTREAL QC H3A 2A7

*Approved*

Dear Dr. Dudek:

**Re: Strategic Partnership Grants for Networks Application entitled "NSERC Canadian Robotics Network", with National Research Council of Canada, Barrick Gold Corporation, FPInnovations, Defence R&D Canada, Huawei Technologies Co., Ltd., Clearpath Robotics Inc., Kinova, General Dynamics Land Systems - Canada, Canadian Space Agency, CrossWing Inc., Open Source Robotics Foundation Inc., Element AI**

It is my pleasure to inform you that a grant was approved for the above-mentioned application. The award was approved as follows:

**Award Start Date: June 30, 2018**

Year	Awarded Amount	Fiscal Year	Payment Amount	Fiscal Year Total (For NSERC's use)
1	\$1,000,000.00	2018	\$1,000,000.00	\$1,000,000.00
2	\$1,125,000.00	2019	\$933,750.00	
		2020	\$191,250.00	
3	\$1,125,000.00	2020	\$933,750.00	
		2021	\$191,250.00	
4	\$1,125,000.00	2021	\$933,750.00	
		2022	\$191,250.00	
5	\$1,125,000.00	2022	\$933,750.00	
		2023	\$191,250.00	

The Strategic Partnership Grants for Networks Selection Committee based its funding recommendation on input provided by external referees and the report of the Site Visit Committee (SVC). I enclose, for your information, a copy of the Message to Applicant, edited external reviewers' comments, and the edited SVC Report. The identities of the authors and any third party reference have been removed following the principles of the

Privacy Act. If you wish to receive a copy of these comments in the other official language, please inform me.

By drawing on the funds provided through this grant or by participating in the activities supported by it, you agree to comply with the following policies and guidelines, and to any amendments to these that NSERC may adopt:

- Section 2 of the *Tri-Agency Framework: Responsible Conduct of Research* (Responsibility of Researchers) posted on the Web site of the Secretariat for Responsible Conduct of Research at <http://www.rcr.ethics.gc.ca/eng/policy-politique/framework-cadre/>;
- the NSERC *Program Guide for Professors* on NSERC's Web site at [www.nserc-crnsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes\\_eng.asp](http://www.nserc-crnsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes_eng.asp); and
- the *Tri-Agency Financial Administration Guide* at [www.nserc-crnsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index\\_eng.asp](http://www.nserc-crnsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index_eng.asp).

The cash commitments of NSERC and the partner organizations to the network are summarized below.

	NSERC Amount Requested	Partner Eligible Cash	CSA Cash	Partner Eligible In-kind	Amount Recommended
Year 1					\$1,000,000
Year 2					\$1,125,000
Year 3					\$1,125,000
Year 4					\$1,125,000
Year 5					\$1,125,000
TOTAL					\$ 5,500,000

NSERC is releasing the first year grant instalment to the host university with this notice. It is our expectation that these grant funds will be distributed to co-investigators without delay so that network researchers may begin their research immediately.

NSERC expects that the collaborating universities will create network specific accounts for the co-investigators as soon as the network funds arrive so that research can begin as soon as possible.

The expectation is that research will be well underway within six months of the award start date.

**The following conditions must be completed prior to the release of the second grant instalment:**

**Within three months:**

NSERC must approve the Board of Directors' membership before the board can be established. The membership of this Board must reflect the interests and concerns of the

public, private and academic sectors involved in the Network. It should include some members not directly affiliated with the Network, stakeholder representatives, a researcher from the Network and the Chair of the Scientific Committee, as well as an NSERC Staff Member as a non-voting member. NSERC retains the right to name additional voting members to the Board to ensure objectivity, and the perception of objectivity, in the management of the Network. The Chair of the Board must not be from any of the participating institutions receiving Network funds.

The Network must hold its initial Board meeting to, at a minimum, approve its mandate and review any recommendations or suggestions to the applicants by the Selection Committee and/or the SVC.

**Within six months:**

The Research Agreement between all participating universities and partner organizations must be signed. NSERC suggests that the host university pattern the research agreement after similar Network research agreements that have been signed in the past. Many of the participating universities will have previously signed Network research agreements and should have copies of these documents.

The release of the second instalment of this grant is conditional upon the satisfactory completion of these conditions. An explanation of how NSERC payments are disbursed, and the conditions that apply to this grant, are described in the enclosed Terms and Conditions of Award. The Grant Summary indicates the dates on which the progress and final reports are due at NSERC. Reminders will be sent to you approximately six weeks before the reports are due.

**To help elevate NSERC's visibility, I encourage you to acknowledge NSERC's support in any dealings that you might have with the media regarding this project. I would also encourage you to add NSERC's logo (visual identifier) to your university Web page(s) that present aspects of this project. The logo can be found here: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle_eng.asp).**

Finally, I would like to take this opportunity to congratulate you and your research team on your successful NSERC Strategic Partnership Grants for Networks proposal.

Do not hesitate to contact Sylvain Langlois at 613-995 5667 or at [Sylvain.Langlois@nserc-crsng.gc.ca](mailto:Sylvain.Langlois@nserc-crsng.gc.ca) if you need any further assistance.

Sincerely,

  
Anne-Marie Thompson  
Director  
Energy, Environment and Resources  
Research Partnerships

AMT/bm

Enclosures

1. The external reviews
2. The Message to Applicant (comments of the SNSC)
3. The Site Visit Committee report

cc: [REDACTED] Research, McGill

[REDACTED] Finance, McGill

- ✓ J.K. Tsotsos, Electrical Engineering & Computer Science, York
- ✓ R.M. Jenkin, Electrical Engineering & Computer Science, York
- ✓ H. Zhang, Computing Science, Alberta
- ✓ I.S. Sharf, Mechanical Engineering, McGill
- ✓ D. Kulic, Electrical & Computer Engineering, Waterloo
- ✓ [REDACTED] Head Office, Facebook Canada
- ✓ J.A. Marshall, Mining Engineering, Queen's
- ✓ D.P. Meger, Computer Science, School of, McGill
- ✓ R.T. Vaughan, Computing Science, School of, Simon Fraser
- ✓ A. Lussier Desbiens, Génie mécanique, Sherbrooke
- ✓ S.H.L. Waslander, Mechanical Engineering and Mechatronics, Waterloo
- ✓ A.P. Schoellig, Aerospace Studies, Institute for, Toronto
- ✓ R. Urtasun, Computer Science (St. George Campus), Toronto, McGill
- I. Mantegh, National Research Council of Canada
- [REDACTED] Barrick Gold Corporation
- [REDACTED] FPIInnovations
- J.A.D. Collier, Defence R&D Canada
- [REDACTED] Huawei Technologies Co., Ltd.
- [REDACTED] Clearpath Robotics Inc.
- [REDACTED] Kinova
- [REDACTED], General Dynamics Land Systems - Canada
- J.C. Piedboeuf, Canadian Space Agency
- [REDACTED] CrossWing Inc.
- [REDACTED] Open Source Robotics Foundation Inc.
- [REDACTED] Element AI
- NSERC Communications
- NSERC Finance

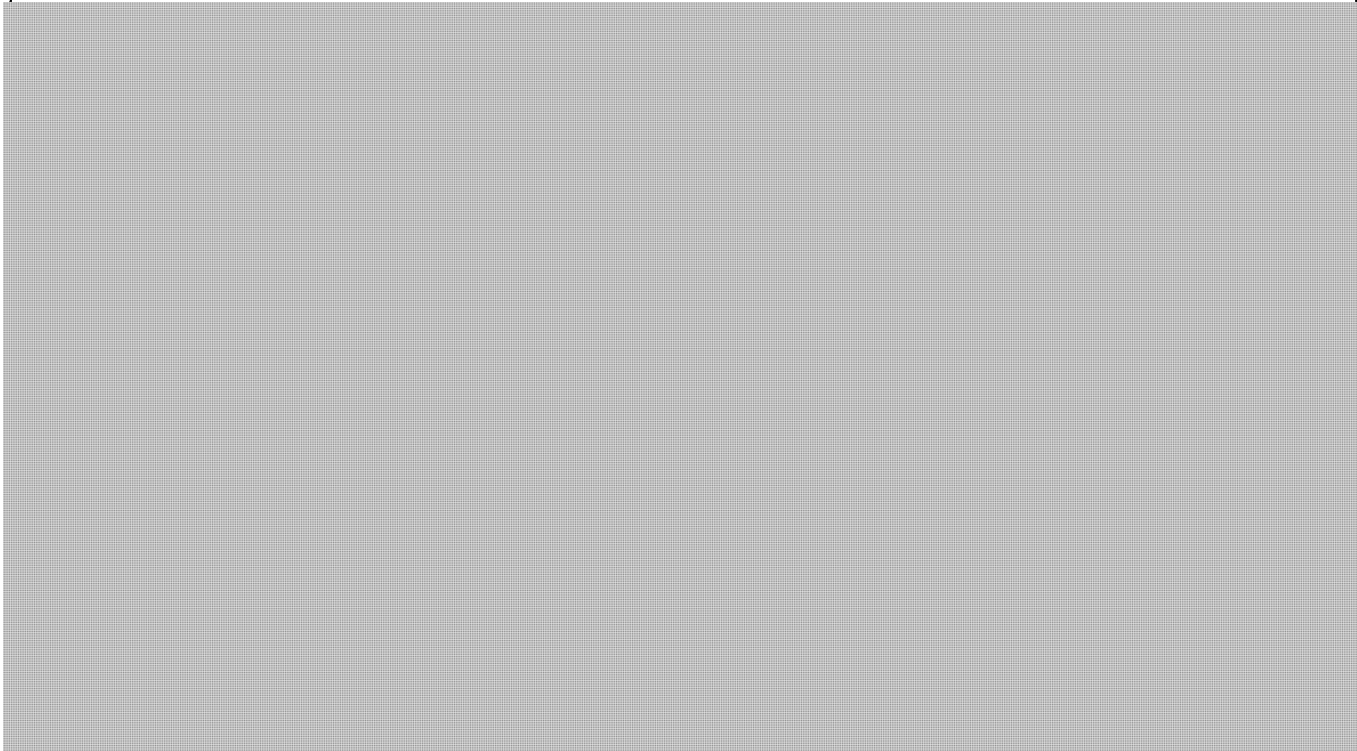


9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Dudek
--	-----------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Langlois, Sylvain

**From:** [redacted] <[redacted]>  
**Sent:** Monday, March 25, 2019 12:22 PM  
**To:** Langlois, Sylvain  
**Cc:** [redacted]; [redacted]; [redacted]; [redacted]  
**Subject:** Re: Conditional CRD 523096-17-- Dr. Chrostowski - ORS FAS# F18-01405 - pending Feb deadline

[redacted]

[redacted]

University of British Columbia

[redacted]

[redacted]

<http://siepic.ubc.ca>

On Mar 25, 2019, at 9:15 AM, Langlois, Sylvain <[Sylvain.Langlois@nserc-crsng.gc.ca](mailto:Sylvain.Langlois@nserc-crsng.gc.ca)> wrote:

Hi [redacted]

[redacted]

Cheers,  
Sylvain.

---

**From:** [redacted]  
**Sent:** Monday, March 25, 2019 12:04 PM  
**To:** Langlois, Sylvain; [redacted]  
**Cc:** [redacted]  
**Subject:** RE: Conditional CRD 523096-17-- Dr. Chrostowski - ORS FAS# F18-01405 - pending Feb deadline

Hi Sylvain,

[redacted]

Cheers

[redacted]

---

**From:** Langlois, Sylvain <[Sylvain.Langlois@nserc-crsng.gc.ca](mailto:Sylvain.Langlois@nserc-crsng.gc.ca)>  
**Sent:** March 25, 2019 8:56 AM  
**To:** [redacted]; [redacted]



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

s.19(1)

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.20(1)(b)

s.20(1)(c)

September 14, 2018

File: CRDPJ 523096 - 17

Dr. L.C. Chrostowski  
Dept. of Electrical & Comp. Engineering  
University of British Columbia  
FRED KAISER BUILDING  
2332 MAIN MALL RM 4041  
VANCOUVER BC V6T 1Z4

Dear Dr. Chrostowski:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "The Canadian SiEPIC silicon photonics foundry - SiEPICfab", with Canadian Microelectronics Corporation, Mentor Graphics Corp., PROMPT, Lumerical Solutions Inc., Applied NanoTools Inc., Huawei Technologies Co., Ltd., Ciena Canada Inc., AEPONYX Inc., Rockport Networks Inc, Luxmux Technology Corporation, Keysight Technologies Canada, Qoherence Instruments Corp., GeniSys GmbH**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of British Columbia.

The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the universities and the partners, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information a copy of the Site Visit Report and NSERC guidelines for Site Visit Committee, which provides the rationale for the amounts approved and comments on the aspects of the proposal

The cash commitments of NSERC and the partners to this project are summarized below.

Year	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
1				\$186,319
2				\$499,045
<b>TOTAL</b>				\$685,364

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Sylvain Langlois  
Manager  
Research Partnerships

Telephone: 613-995-5667  
Fax: 613-992-5337  
Sylvain.Langlois@nserc-crsng.gc.ca

SL/bm

Enclosure

- cc: O.L.L. Liboiron-Ladouceur, Electrical and Computer Engineering, McGill  
W. Shi. Génie électrique et génie informatique, Laval, British Columbia  
Research, British Columbia  
Canadian Microelectronics Corporation  
Mentor Graphics Corp.  
PROMPT  
Lumerical Solutions Inc.  
Applied NanoTools Inc.  
Huawei Technologies Co., Ltd.  
Ciena Canada Inc.  
AEPONYX Inc.  
Rockport Networks Inc  
Luxmux Technology Corporation  
keysight Technologies Canada  
Qoherence Instruments Corp.  
GenISys GmbH

**Langlois, Sylvain**

---

**From:** Langlois, Sylvain  
**Sent:** Thursday, June 28, 2018 3:16 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: SiEPICfab CRD

Good morning [REDACTED] and thank you [REDACTED]



Cheers,  
Sylvain.

**From:** [redacted]  
**Sent:** wednesday, June 27, 2018 2:15 AM  
**To:** Langlois, Sylvain  
**Subject:** SIÉPICfab CRD

Dear Sylvain,

[redacted]

Thank you very much,

[redacted]

[redacted]

[redacted]

[redacted]

Electrical and Computer Engineering  
**University of British Columbia**  
[redacted]-2332 Main Mall, Kaiser Building  
Vancouver, B.C., **Canada**, V6T-1Z4  
Office: Room [redacted] *Kaiser Building*  
Work: [redacted]  
mobile: [redacted]

[redacted]

Personal identification no. (PIN)

Family name of applicant

s.20(1)(c)

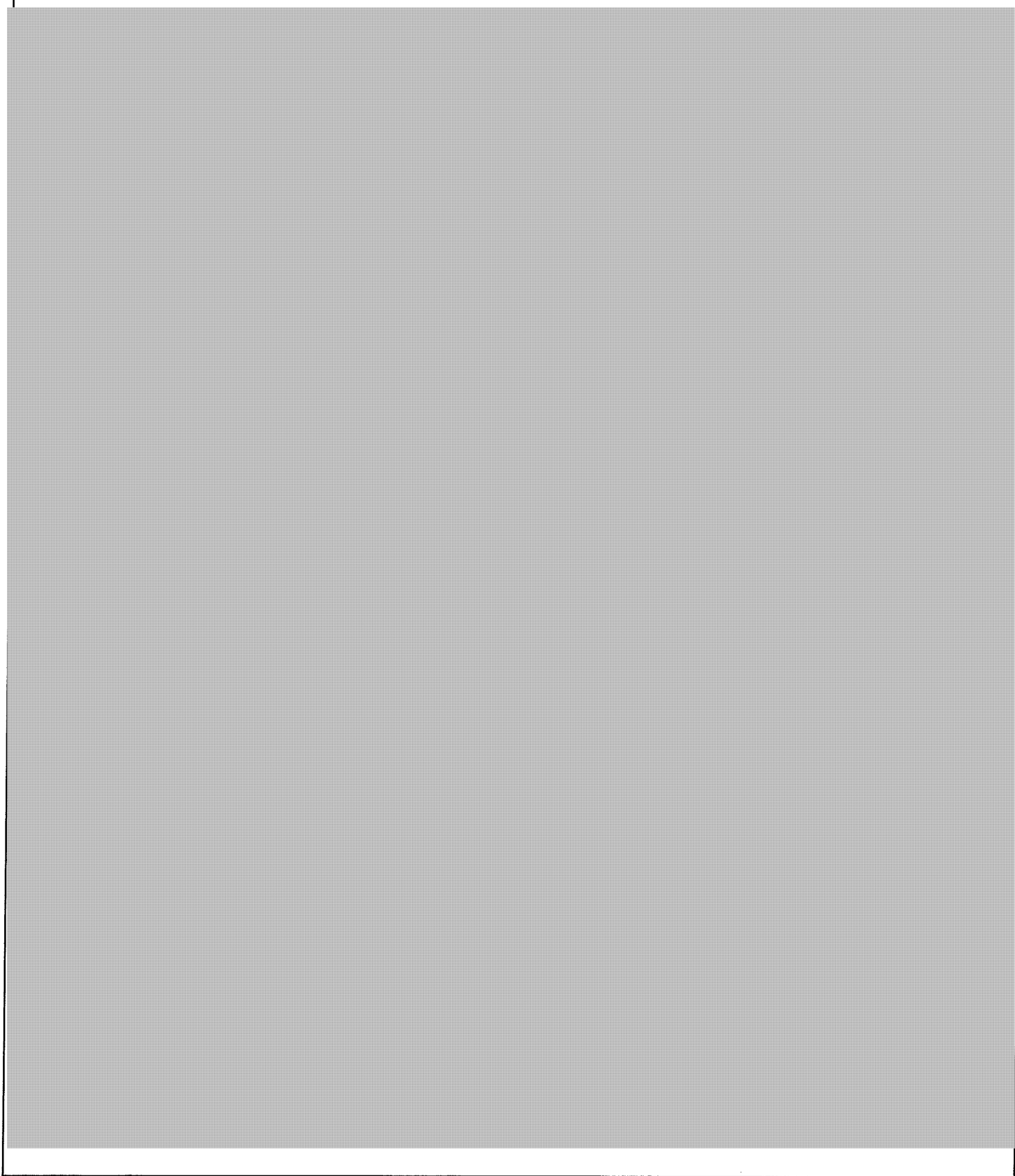
**Valid**

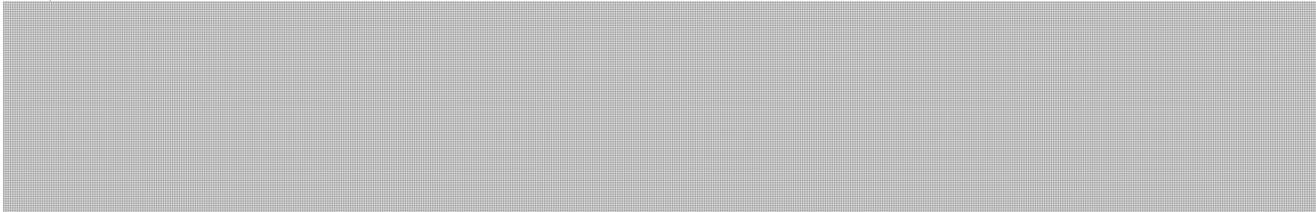


Chrostowski

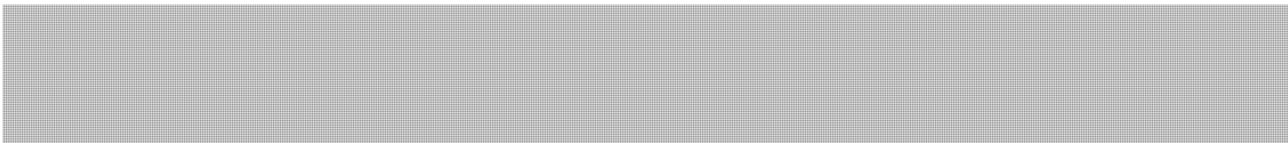
**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

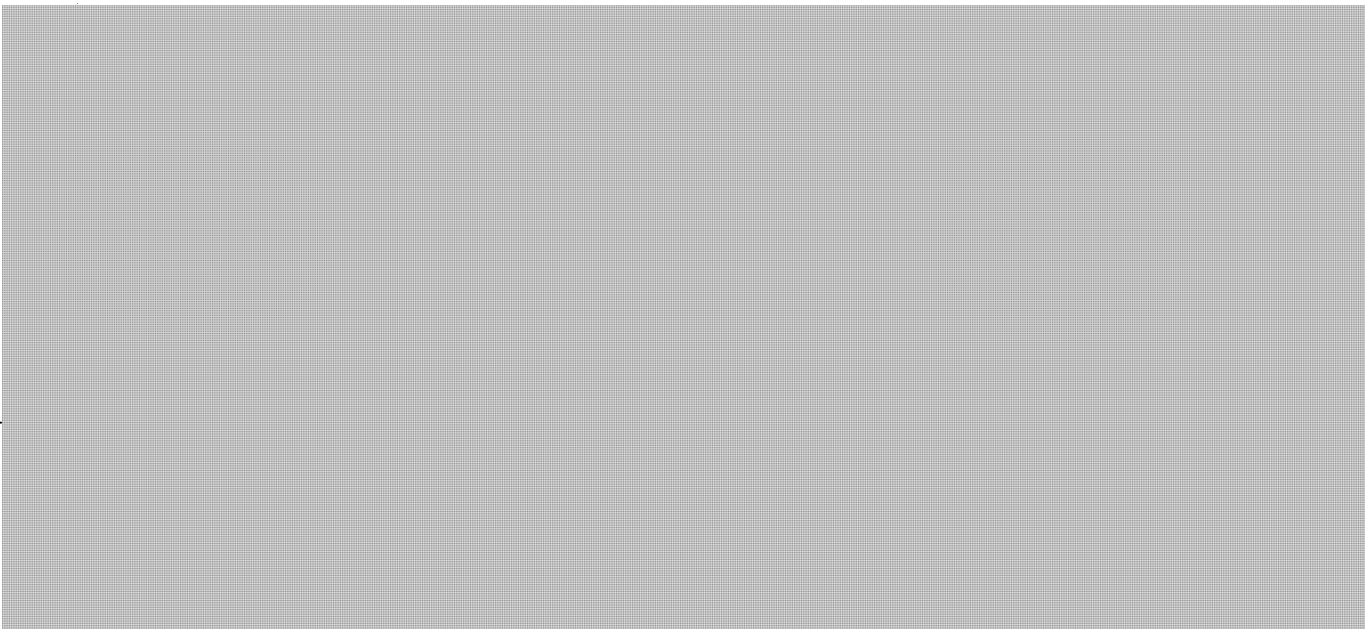




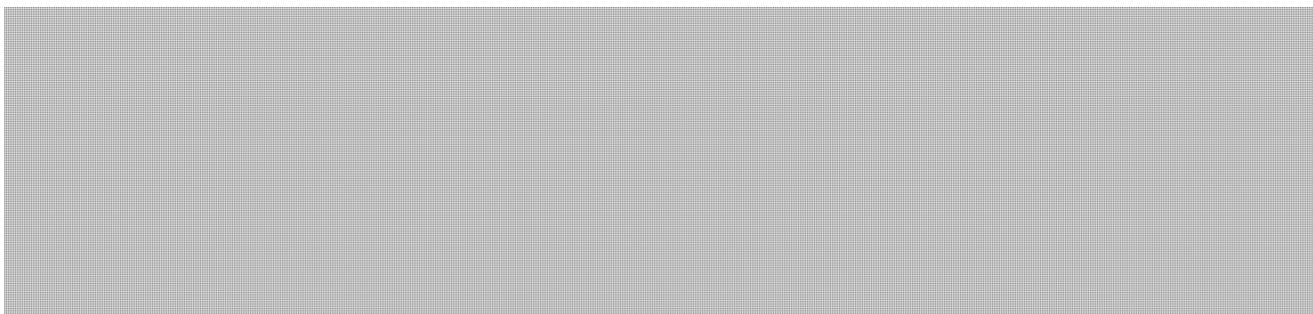
**8. Clarification of the role of McGill and financial contribution if any (not mentioned in University support section)**



**9. Clarify the status of the equipment that will be used for this project.**

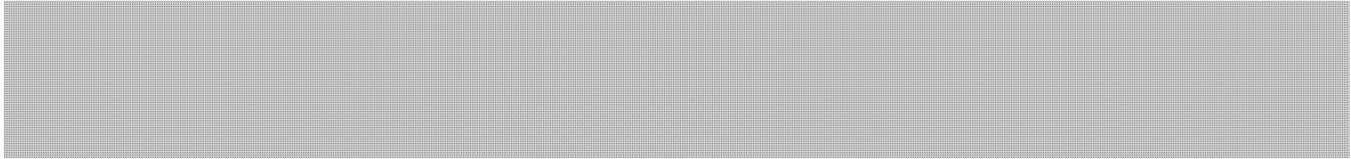


**10. Provide more details about planned IP agreement in IP section**

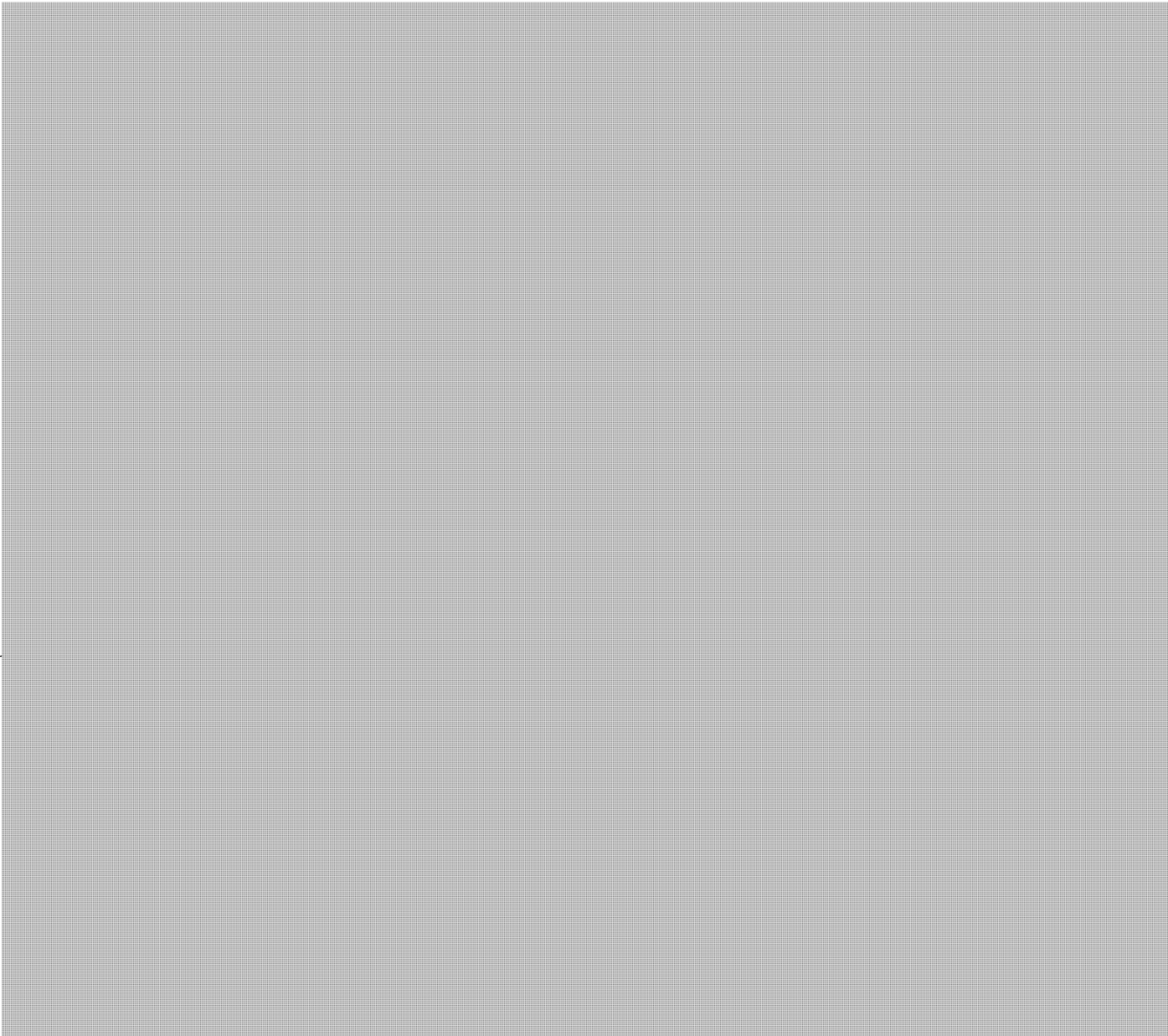




**11. Clearly state that all material from the bi-monthly and bi-weekly runs that are supported by this program will not have any partner constraints from being published.**



**12. Provide a brief explanation why only two-year support is requested and what is the longer-term vision.**



April 18<sup>th</sup>, 2019

File: CRDPJ 531857 - 18

**PROTECTED B**

Dr. S.I. Al Kiswany  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Al Kiswany:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Sequentially consistent reads at wire speed", with Huawei Technologies Co.,  
Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.



 The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the NSERC Guidelines for External Reviewers. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner to this project are summarized on the next page.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$54,200
Year 2				\$40,450
<b>TOTAL</b>				<b>\$94,650</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

Kevin Lapointe  
Senior Program Officer  
Research Partnerships

Telephone: 613-996-7229  
Fax: 613-992-5337  
E-Mail: kevin.lapointe@nserc-crsng.gc.ca

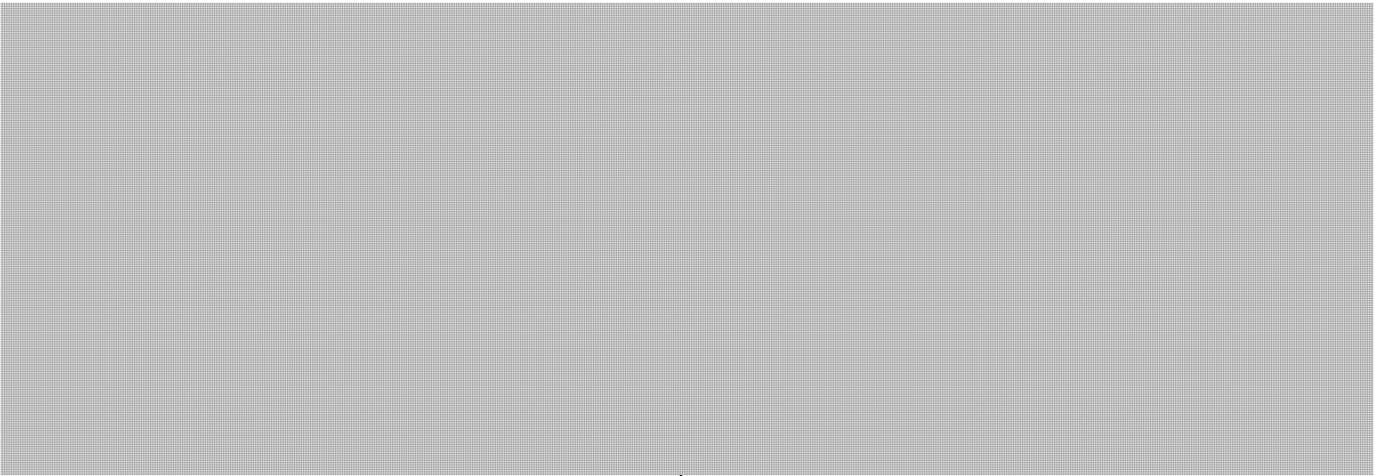
KL/wr

Enclosure

cc: [redacted], Research, Waterloo  
[redacted] Huawei Technologies Co., Ltd.



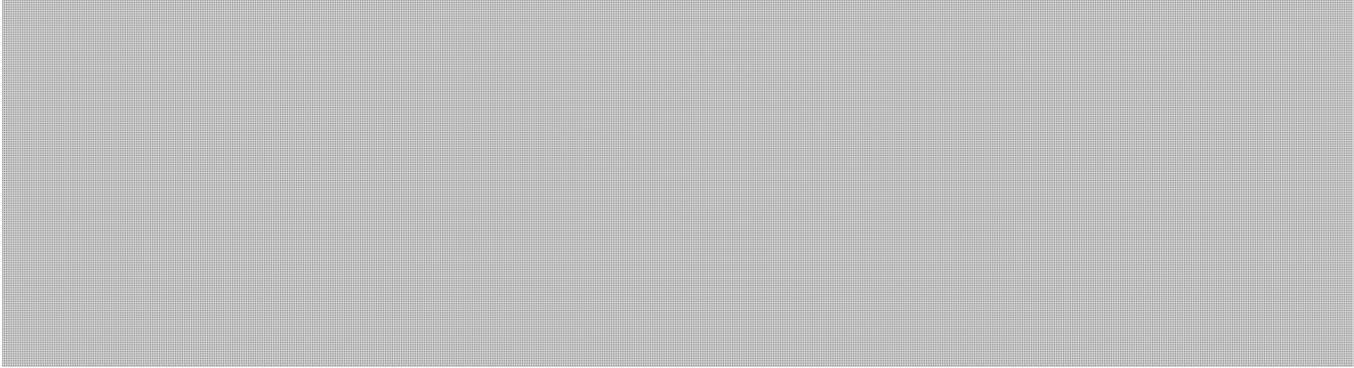
*Impact*



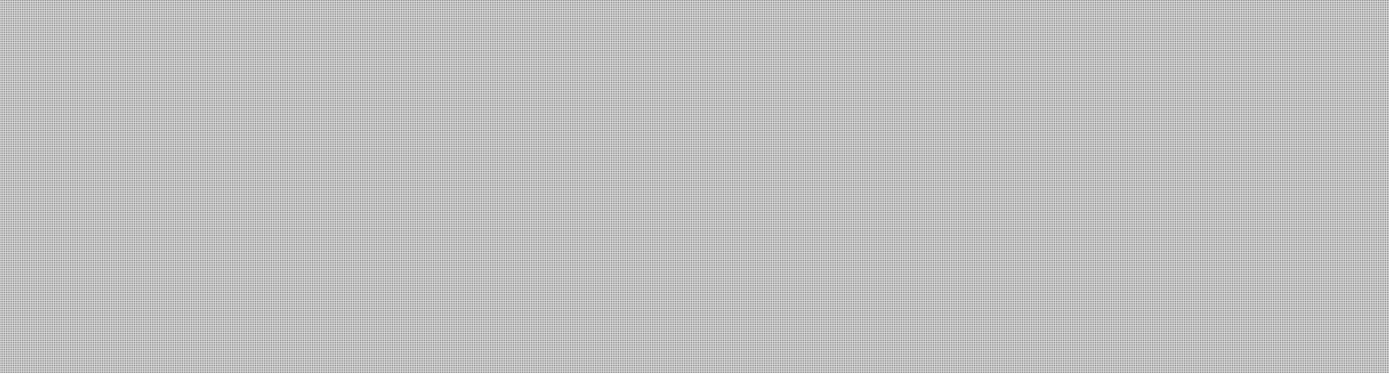
**2 Detailed Proposal**

**2.1 Proposed Solution**





**8 Benefits to Canada**



Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Al Kiswany
--	--

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

[REDACTED]

**Christensen, Helene**

---

**From:** Christensen, Helene  
**Sent:** Monday, May 13, 2019 1:56 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]; [REDACTED]  
**Subject:** Acknowledgement of CRDPJ 539431-2019 entitled: "Scalable infrastructure for next generation data management systems"



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

Dr. T.A. Brown  
David R. Cheriton School of Computer  
Science  
University Of Waterloo  
200 University Ave W  
Waterloo ON N2L 3G1

Dear Dr. Brown:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Scalable infrastructure for next generation data management systems", with  
Huawei Technologies Co., Ltd.**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks.

NSERC will attempt to reach a funding decision within three to five months of receipt of a complete application and where no additional issues are raised during the peer review process. As a result of an increased volume of applications, the funding decision may be delayed. I will keep you informed of any significant developments

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. You are therefore encouraged to start discussions with your partner as soon as possible.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

**H. Christensen for:**

Linda Martin  
Manager  
Research Partnerships

Telephone: (613) 944-7528  
Fax: (613) 992-5337  
E-mail: [Linda.Martin@nserc-crsng.gc.ca](mailto:Linda.Martin@nserc-crsng.gc.ca)



350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5


s.19(1)

## Terms and Conditions of Award Grant Summary

**File:** CRDPJ 539431 - 19

**Project Title:** Scalable infrastructure for next generation data management systems

**Grantee:** T.A. Brown, David R. Cheriton School of Computer Science, University of Waterloo

**Partner:**  Huawei Technologies Co., Ltd.

**Co-grantee:** A.J.M. Mashtizadeh, David R. Cheriton School of Computer Science, University of Waterloo

**Collaborator(s):** N/A

**Project Start Date:** 2019/12/01      **Project End Date:** 2022/11/30

**Report Due Dates:**

Status Report*	2020/11/01
Progress Report 1	2021/09/01
Final Report	2023/01/30

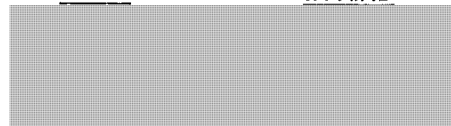
\*Status report – Reminder will be sent to report any issues with project or partner.

### Amount of Award:

### Partner Contribution:

1/3	\$79,200	2019/12/01
2/3	\$84,200	2020/12/01
3/3	\$84,200	2021/12/01

CASH	IN KIND
------	---------



Linda Martin  
Manager  
Research Partnerships

Telephone: (613) 944-7528  
Fax: (613) 992-5337  
E-mail: Linda.Martin@nserc-crsng.gc.ca



## TERMS AND CONDITIONS OF AWARD



### Collaborative Research & Development Grants

#### 1. Introduction

The Terms & Conditions for a Research Partnerships (RP) grant is a statement that establishes the responsibilities of each party in the collaboration and highlights important policies affecting the grant.

By drawing on the funds provided through this award, you (the “grantee” or “co-grantee”, collectively referred to as the “grantees”) confirm that, during the tenure of this grant/award, you and the co-grantee(s) will comply with the following terms and conditions. You will insure that the terms and conditions of this award are known and understood by the partners and/or other participating organizations (collectively referred to as “the supporting organizations”). In addition, the grantees acknowledge their obligation to cooperate in working towards a successful outcome and to meeting their reporting and financial obligations.

#### 2. General

1. **You will use grant funds (including financial contributions from both NSERC and the partners) only for the specific purposes for which they were awarded.** Grant funds may not be used for items not approved, or for unauthorized purposes such as indirect costs of research.
2. You will provide true, complete, accurate information in any documents related to your grant/award, and you will represent yourself, your research and your accomplishments in a manner consistent with the norms of the relevant field
3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
5. You are not currently ineligible to apply for and/or hold funds from NSERC, the Social Sciences and Humanities Research Council (SSHRC), or the Canadian Institutes of Health Research (CIHR), or any other research or research funding organization worldwide for reasons of breach of policies on responsible conduct of research, such as ethics, integrity or financial management policies. If at any time you become ineligible for any of these reasons, you will advise your institutional officials and NSERC immediately, in writing.
6. You will comply with the  Tri-Agency Framework: Responsible Conduct of Research, which includes but is not limited to the Tri-Agency Financial Administration Guide, the Program Guide for Professors, and the Tri-Agency Research Integrity Policy, and with any amendments to these that NSERC may adopt.
7. If you are or have been (at any time during the past 12 months) a federal public servant, you have complied with and will continue to respect the  Values and Ethics Code for the Public Sector.

8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
9. In the event of any change in your eligibility status, you will inform NSERC and your institutional officials immediately, in writing.
10. You will inform institutional officials of any changes in the nature of the research that may have an impact on certification or approvals as in section 2.4 Agency Requirements for Certain Types of Research of the [Tri-Agency Framework: Responsible Conduct of Research](#).
11. You will inform NSERC and your institutional officials of any changes in the nature of the research that may require an environmental review/assessment or involves the use of human pluripotent stem cells. You will not proceed with these research activities requiring additional certification until NSERC approval has been obtained.
12. You will inform your institutional officials if your research plan changes to include new activities involving humans or the use of animals. You will not proceed with these research activities until institutional approval has been obtained.

Unless otherwise specified, the policies governing RP awards, including both the NSERC financial contribution and the partners' financial contribution are the same as those that apply generally to NSERC awards and to the use of grant funds.

In addition, you understand that:

the [Access to Information Act and the Privacy Act \(ATIP\)](#), and the [Use and Disclosure of Personal Information Provided to NSERC](#), pertain to the information NSERC collects from and about you.

### **3. Duration of the Award**

The duration of the award is indicated by the start and end dates in the Grant Summary. Should circumstances change, adjustments to these dates can be negotiated. A written request for an extension will be considered by NSERC and will be approved if the need for an extension is well justified, and as long as there is agreement with other participants and collaborators.

### **4. Schedule of NSERC Payments**

The approved amount of the grant is given in the Grant Summary.

In order to maximise the management of public funds, NSERC will release annual instalments of awards according to the following schedule:

- up to \$250,000 – one payment
- \$250,001 to \$500,000 – two payments at six month intervals
- \$500,001 to \$1,000,000 – four payments at three month intervals
- \$1,000,001 or more – monthly payments

## **5. Release of Instalments**

The second and subsequent instalments will be released on or about the anniversary of the start date subject to:

- the availability of funds;
- confirmation that the partner(s) have met their obligations in providing cash and in-kind support;
- confirmation of continued financial support by the partner(s) for the following term;
- satisfactory review of progress;
- demonstrated need for funds.

Depending on the above, the amount of the instalment is negotiable.

NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

## **6. Research Objectives**

The grantees and the collaborators will make every effort to adhere to the approved research plan. NSERC must approve major deviations in the approved plan or research objectives **before** the changes are implemented.

## **7. Interactions Among the Grantees and the Supporting Organizations**

Consistent with the intent of fostering productive research collaborations, the grantees will hold regular discussions with the supporting organizations to exchange information, examine results, review priorities and consider measures to enhance the mutual benefits. NSERC should be informed of any major developments or situations where NSERC staff might be of assistance.

## **8. Progress Reporting and Review**

As indicated in the Grant Summary, or upon request, the grantee will provide a report that describes progress to date and updates the plans for the future conduct of the research; and the resources required to complete the approved work.

Progress reports are requested at a frequency that depends on the size and the total duration of the award:

- all CRD awards are required to provide a final report;
- CRD grants with an awarded value  $\geq$  \$150,000 in the first year or on annual average, are required to provide an annual progress report;
- CRD grants with an awarded value  $\geq$  \$50,000 and  $<$  \$150,000 in the first year or on an annual average are required to provide a progress report near the end of each two year cycle:
  - near the end of year two for three and four year CRD awards;
  - near the end of year two and year four for five year CRD awards.
- at the end of year two and subsequent, where a progress report is not required, a confirmation of the continuing collaboration with the partners, receipt of the partner's

contributions and the need for funds (grant account balance) will be requested from the grantee and the Institution;

- CRD grants with an award value < \$50,000 in the first year or on an annual average will not be required to provide a progress report.

NSERC will send reminders that a progress report or other information is due, and will provide guidelines on the items to be addressed.

At its discretion, NSERC may require a progress report when one is not normally required.

## **9. Budgets**

**Some latitude is allowed in adherence to planned expenditures, however; NSERC must approve the reallocation of resources of more than 20% of an approved budget item in advance.** (e.g. The training of highly qualified personnel is an NSERC priority; **any deviations** in the approved training plan must receive prior authorization from NSERC).

NSERC bears no responsibility for expenditures beyond the amount in the grant account.

## **10. Participation of the Partners**

Each partner agrees to:

- honour its commitment to the project (in cash and/or in kind) as approved;
- provide periodic assessments, as requested by NSERC, to assist in the evaluation of the progress of the research;
- make every effort to use the project results in its Canadian operation and to the benefit of the Canadian economy and Canadians.

## **11. Intellectual Property**

The grantee and co-grantees, the universities, and partners agree to abide by *NSERC's Policy on Intellectual Property* ([http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi\\_eng.pdf](http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi_eng.pdf)). *NSERC's Policy on Intellectual Property* (IP) supports the premise that every effort should be made to exploit the results of NSERC-funded research for the benefit of Canada and Canadians. As a condition of accepting an award, NSERC grantees agree to disclose to their institutions any IP with commercial potential arising from the award should they decide to pursue commercialization. If you disclose any potential IP arising from the research, you and the institution will endeavor to obtain the greatest possible economic benefit to Canada from the resulting commercial activity. This requirement for disclosure is not intended to supersede the IP ownership policy that the institution might already have in place.

## **12. Change of Status – Grantees**

The grantee and/or the university will inform NSERC immediately of significant changes in the status of the grantee and/or the co-grantees such as taking a sabbatical, or other leave, or upon permanent departure from the university.

## **13. Change of Status –Partners**

The grantee will notify NSERC immediately of any change in status of the partners in the grant. These changes could include any or all of the following:

- contact name at the organization;
- buyouts, change of ownership and subsequent name change of the organization;
- withdrawal or adjustment of cash and/or in-kind support;
- new organizations participating.

Depending on the change, a new Form 183A (Information Required from Organizations Participating in Research Partnerships) may have to be completed including a letter of support (<http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/183A/e.asp>).

#### **14. Termination of Support**

NSERC reserves the right to terminate support at any point:

- should progress be found to be unsatisfactory;
- if the support of the partner(s) falls to a level substantially less than the amount stated in the Grant Summary, or is withdrawn entirely and a suitable replacement cannot be found;
- for other issues that may arise.

In the event of early termination of an award, NSERC will negotiate an orderly phase-out of the project or program to ensure minimal disruption especially for any HQP in training. However, in cases where there is an allegation of a breach of NSERC policy, or a confirmed breach, the Tri-Agency Framework: Responsible Conduct of Research applies.


#### **15. Public Announcements and Acknowledgement of NSERC Support**

NSERC normally makes a decision on the need for an official public announcement of competition results. Your institution must refrain from making any announcements until this takes place. All announcements of awards must be made in adherence to the <http://www.science.gc.ca/default.asp?lang=En&n=711200B1-1> (also see relevant sections of the <http://www.science.gc.ca/default.asp?lang=En&n=56B87BE5-1>

Funding recipients may be asked to take part in NSERC's public announcement. This does not prevent you from confidentially sharing information about your funding with your collaborators or referring to NSERC funding in applications for other funding. If you foresee any issues or concerns arising from this condition, please contact NSERC.

By drawing on the funds provided through this award, the grantees agree that in all communications relating to the research, or research results, they will acknowledge NSERC support and the support of the participating Canadian Government department and/or agencies.

#### **16. Consent to Disclosure of Personal Information:**

You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the  Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were

employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

**Note:** If you have any concerns about your ability to comply with the terms and conditions listed above, contact your institutional official or NSERC staff responsible for the program immediately. Do not agree to the terms and conditions and do not draw down on any funds paid to you or to the host institution until you are certain that you can and will comply with all of the requirements.

s.19(1)  
s.20(1)(b)  
s.20(1)(c)  
s.21(1)(a)

Reviewer 3  
Rec'd July 21, 2019



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada



**2. Competence of the Research Team / Compétence de l'équipe de recherche**

[Redacted content]

**3. Training Opportunities / Occasions de formation**

[Redacted content]

**4. Industrial Relevance and Benefits / Pertinence et avantages pour l'industrie**

[Redacted content]

**5. Benefits to Canada / Avantages pour le Canada**

[Redacted content]

**6. Budget**

[Redacted content]

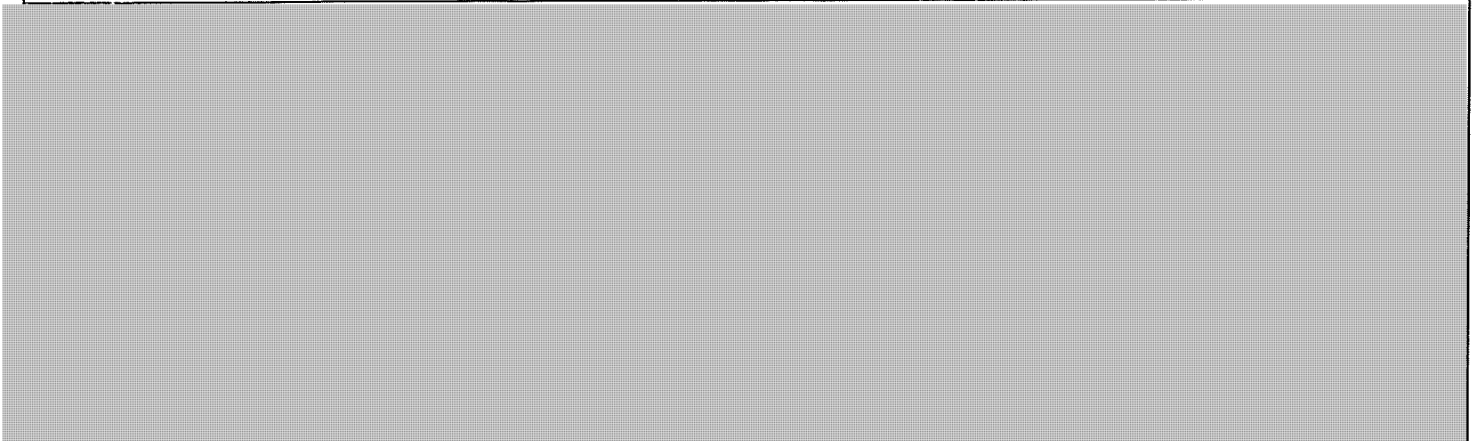
**7. Other Considerations / Autres points à considérer**

[Redacted content]

Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant s.20(1)(c)  Brown
--	--

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.





**Nsiama, Tienabe**

---

**From:** McFarlane, Ainsley  
**Sent:** Thursday, September 21, 2017 1:38 PM  
**To:** Parisien, Guylaine  
**Subject:** FW: NSERC CRD (CRDPJ 513200-17)  
**Attachments:** Krishnamurthy - Huawei - Original Contract FE.pdf

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Thursday, September 21, 2017 1:32 PM  
**To:** McFarlane, Ainsley  
**Subject:** RE: NSERC CRD (CRDPJ 513200-17)

Good morning Ainsley,

[redacted]

Many thanks,

[redacted]

[redacted] | Research Services | University of Calgary

**Mailing and Courier Address:** 2500 University Drive N.W., Calgary, Alberta, T2N 1N4

**Physical Address:** SMART Technologies Building, 3636 Research Road N.W., Calgary, AB

**Phone:** [redacted] | **Fax:** 403.210.7954 | **E-mail:** [redacted]

This e-mail message, together with any attachments, is intended only for the named recipient(s) above and may contain information that is proprietary, privileged, confidential and/or exempt from disclosure under applicable law. If you have received this message in error, or are not the named recipient(s), please immediately notify the sender, delete this e-mail message, along with any attachments from your computer and destroy all copies.

---

**From:** McFarlane, Ainsley [mailto:Ainsley.McFarlane@NSERC-CRSNG.GC.CA]  
**Sent:** Thursday, September 21, 2017 11:26 AM  
**To:** [redacted] <[redacted]>  
**Subject:** RE: NSERC CRD (CRDPJ 513200-17)

Dear [redacted]

Can you please send me the original agreement as well, so that I can confirm that it is NSERC compliant. Thank you,

Ainsley

---

**From:** [redacted]  
**Sent:** Thursday, September 21, 2017 1:00 PM  
**To:** McFarlane, Ainsley  
**Subject:** NSERC CRD (CRDPJ 513200-17)

Good morning Ainsley,

[REDACTED]

If you have any questions, please do not hesitate to contact me.

Many thanks,

[REDACTED]  
[REDACTED] Research Services | University of Calgary  
**Mailing and Courier Address:** 2500 University Drive N.W., Calgary, Alberta, T2N 1N4  
**Physical Address:** SMART Technologies Building, 3636 Research Road N.W., Calgary, AB  
**Phone:** [REDACTED] | **Fax:** 403.210.7954 | **E-mail:** [REDACTED]

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**Nsiama, Tienabe**

---

**From:** McFarlane, Ainsley  
**Sent:** Thursday, September 21, 2017 1:01 PM  
**To:** Parisien, Guylaine  
**Subject:** FW: NSERC CRD (CRDPJ 513200-17)  
**Attachments:** Krishnamurthy - Huawei - FE Amendment - 21 Sep 17.pdf

---

**From:** [REDACTED] **Duplicate email / Courriel en double**  
**Sent:** Thursday, September 21, 2017 1:00 PM  
**To:** McFarlane, Ainsley  
**Subject:** NSERC CRD (CRDPJ 513200-17)

Good morning Ainsley,

[REDACTED]

If you have any questions, please do not hesitate to contact me.

Many thanks,

[REDACTED]  
[REDACTED] | Research Services | University of Calgary  
**Mailing and Courier Address:** 2500 University Drive N.W., Calgary, Alberta, T2N 1N4  
**Physical Address:** SMART Technologies Building, 3636 Research Road N.W., Calgary, AB  
**Phone:** [REDACTED] | **Fax:** 403.210.7954 | **E-mail:** [REDACTED]

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Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

July 24, 2017

File: CRDPJ 513200 - 17

Dr. D. Krishnamurthy  
Department of Electrical and  
Computer Engineering  
University of Calgary  
2500 UNIVERSITY DR NW ICT 402  
CALGARY AB T2N 1N4

Dear Dr. Krishnamurthy:

**Re: Collaborative Research and Development Grants - Project (CRDP.J) entitled  
"Performance management tools for big data applications", with Huawei  
Technologies Canada**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Calgary.

[REDACTED]

[REDACTED] The start date establishes the reporting and payment schedules. **The requested IP agreement must cover, at a minimum, the entire duration of the NSERC project.**

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

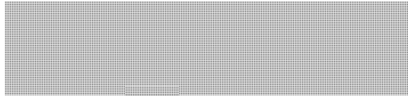
The cash commitments of NSERC and the industrial sponsors to this project are summarized below.

	Original Amount Requested	Industrial Cash	Industrial In-kind	Amount Recommended
Year 1	[REDACTED]	[REDACTED]	[REDACTED]	\$68,000
TOTAL	[REDACTED]	[REDACTED]	[REDACTED]	\$68,000

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Ainsley McFarlane  
Senior Program Officer  
Research Partnerships

Telephone: (613) 992-4265  
Fax: (613) 992-5337  
E-Mail: [Ainsley.McFarlane@nserc-crsng.gc.ca](mailto:Ainsley.McFarlane@nserc-crsng.gc.ca)

AM/gp

Enclosure

cc: [Redacted] Research, Calgary  
[Redacted] Huawei Technologies Canada

**Page 320**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 321**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 322**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



## IP Checklist

D. Krishnamurthy 513200 - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file

  
Ainsley Mc riane  
Senior Program Officer

Sept. 25/17

Date

**Nsiama, Tienabe**

---

**From:** McFarlane, Ainsley  
**Sent:** Wednesday, August 02, 2017 8:33 AM  
**To:** [REDACTED]  
**Cc:** Parisien, Guylaine  
**Subject:** RE: NSERC - CRD 513200-17 - reviewer comments, response required

Dear [REDACTED],

[REDACTED]

Regards,

Ainsley

---

**From:** [REDACTED]  
**Sent:** Monday, July 31, 2017 11:59 AM  
**To:** McFarlane, Ainsley  
**Subject:** RE: NSERC - CRD 513200-17 - reviewer comments, response required

Hi Ainsley,

[REDACTED]

Thanks,

[REDACTED]

---

**From:** McFarlane, Ainsley [<mailto:Ainsley.McFarlane@NSERC-CRSNG.GC.CA>]  
**Sent:** Wednesday, July 19, 2017 6:53 AM  
**To:** [REDACTED]  
**Subject:** RE: NSERC - CRD 513200-17 - reviewer comments, response required

Dear [REDACTED]

[REDACTED]

Regards,

Ainsley

---

**From:** [REDACTED]  
**Sent:** Tuesday, July 18, 2017 3:30 PM

s.19(1)

s.20(1)(b)

s.20(1)(c)

To: McFarlane,Ainsley

Subject: RE: NSERC - CRD 513200-17 - reviewer comments, response required

Hi Ainsley,



Regards,



---

From: McFarlane,Ainsley [mailto:[Ainsley.McFarlane@NSERC-CRSNG.GC.CA](mailto:Ainsley.McFarlane@NSERC-CRSNG.GC.CA)]

Sent: Wednesday, July 12, 2017 11:51 AM

To: 

Subject: NSERC - CRD 513200-17 - reviewer comments, response required

Importance: High

Dear 



Sincerely,  
Ainsley

**Ainsley McFarlane, PhD**

**Senior Program Officer | Administratrice principale de programme**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

[Ainsley.McFarlane@nserc-crsng.gc.ca](mailto:Ainsley.McFarlane@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-992-4265

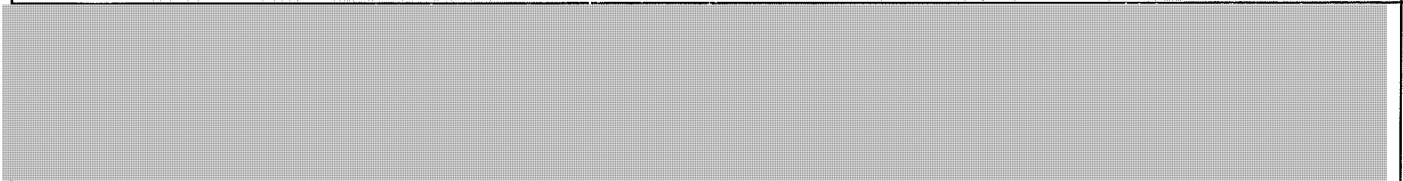
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Krishnamurthy
--	---

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



[Empty form area for intellectual property discussion]

**Nsiama,Tienabe**

---

**From:** Nsiama,Tienabe  
**Sent:** Wednesday, December 12, 2018 8:00 AM  
**To:** Parisien,Guyline  
**Subject:** FW: NSERC CRD #530327-18 for R. Boutaba

---

**From:** [Redacted]  
**Sent:** Wednesday, December 12, 2018 2:39 AM  
**To:** [Redacted]  
**Cc:** Nsiama,Tienabe; [Redacted]  
**Subject:** Re: NSERC CRD #530327-18 for R. Boutaba

[Redacted]

Best  
Regards

[Redacted]

On Dec 11, 2018, at 11:28 PM, [Redacted] <[Redacted]> wrote:

Good Afternoon Nsiama

I hope you are doing well.

NSERC CRD: "Elastic Optical Network Virtualization"

[Redacted]

Thanks in Advance and have a great day.

[Redacted]

[Redacted]

Office of Research, East Campus 5 Room [Redacted]  
University of Waterloo  
200 University Ave W  
Waterloo, ON N2L 3G1

519-888-4567 X [REDACTED]  
Fax: 519-729-9971

<image001.png>

**HAVE A GREAT DAY!**

"The information in this message, including any attachments, is privileged and may contain confidential information intended only for the person(s) named above. Any other distribution, copying or disclosure is strictly prohibited. If you are not the intended recipient or have received this message in error, please notify us immediately by reply email and permanently delete the original transmission from us, including any attachments, without making a copy. Thank you."

<Boutaba, R. NSERC CRD with Huawei Conditional Offer.pdf>

**Nsiam, Tienabe**

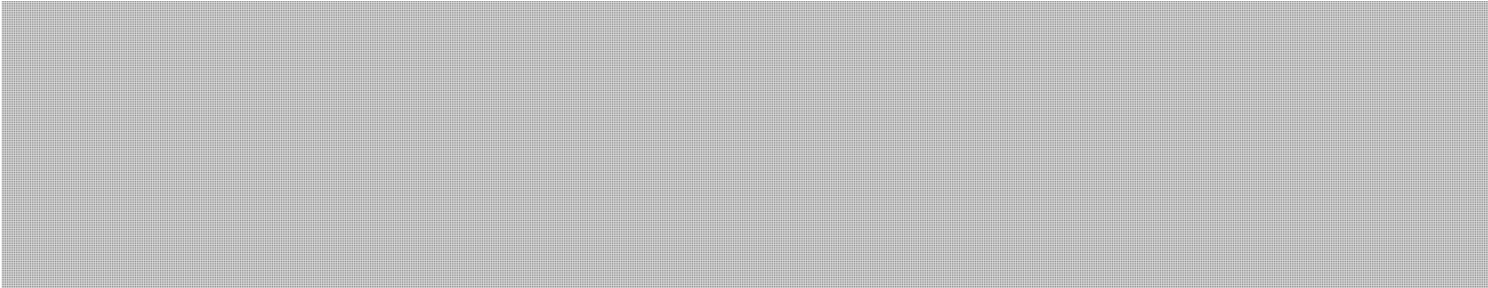
---

**From:** [Redacted] <[Redacted]>  
**Sent:** Tuesday, December 11, 2018 2:28 PM  
**To:** Nsiam, Tienabe  
**Cc:** [Redacted]  
**Subject:** NSERC CRD #530327-18 for R. Boutaba  
**Attachments:** Boutaba, R. NSERC CRD with Huawei Conditional Offer.pdf

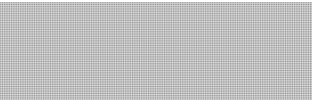
Good Afternoon Nsiam

I hope you are doing well.

NSERC CRD: "Elastic Optical Network Virtualization"



Thanks in Advance and have a great day.



Office of Research, East Campus 5 Room [Redacted]  
University of Waterloo  
200 University Ave W  
Waterloo, ON N2L 3G1  
519-888-4567 X [Redacted]  
Fax: 519-729-9971



**HAVE A GREAT DAY!**

"The information in this message, including any attachments, is privileged and may contain confidential information intended only for the person(s) named above. Any other distribution, copying or disclosure is strictly prohibited. If you are not the intended recipient or have received this message in error, please notify us immediately by reply email and permanently delete the original transmission from us, including any attachments, without making a copy. Thank you."



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

November 30, 2018

File: CRDPJ 530327 - 18

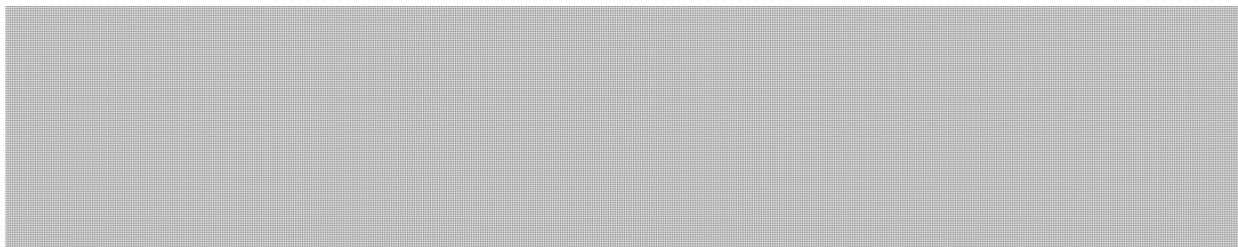
**PROTECTED B**

Dr. R. Boutaba  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Boutaba:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Elastic optical network virtualization", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.



The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.



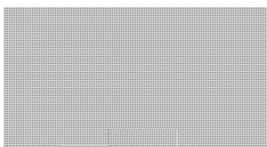
The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1	[REDACTED]			\$74,121
Year 2				\$74,121
TOTAL				\$148,242

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Tienabe Nsiama  
Senior Program Officer  
Research Partnerships

Telephone: (613) 992-4265  
Fax: (613) 992-5337  
E-Mail: [Tienabe.Nsiama@nserc-crsng.gc.ca](mailto:Tienabe.Nsiama@nserc-crsng.gc.ca)

TN/gp

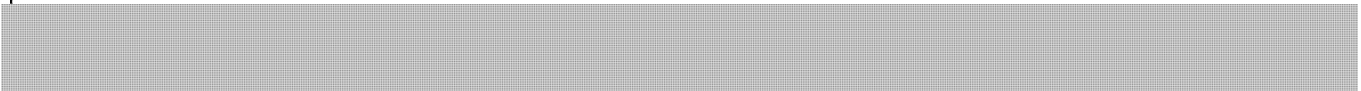
Enclosure

cc: [REDACTED], Research, Waterloo  
[REDACTED] Huawei Technologies Co., Ltd.

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Boutaba
--	-------------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



[Empty text area for intellectual property discussion]

**Pages 333 to / à 347  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 348 to / à 349**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**  
  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

October 3, 2019

File: IRC 537311 - 18

**PROTECTED B**

Dr. L. Lapointe  
Département de Biologie  
Université Laval  
[REDACTED]-D-PAVILLON Alexandre VACHON  
QUEBEC QC G1V 0A6

Dear Dr. Lapointe:

**Re: Industrial Research Chairs - Regular (IRC) entitled "NSERC/Huawei  
Industrial Research Chair in Fiber Optic Communications Systems  
(FOCUS Systems)", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved the establishment of the "NSERC/Huawei Industrial Research Chair in Fiber Optic Communications Systems (FOCUS Systems)" at the Université Laval with Dr. L.A. Rusch as Senior Chairholder.

[REDACTED]

The start date establishes the reporting and payment schedules.

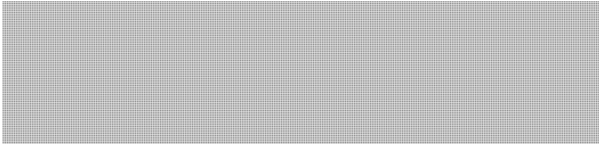
**Once the award is confirmed, NSERC Communications must be contacted before making any public announcement of the Chair.** General guidelines for announcing major NSERC awards can be found at [http://www.nserc-crsng.gc.ca/\\_doc/NSERC-CRSNG/annonce-annonce\\_eng.pdf](http://www.nserc-crsng.gc.ca/_doc/NSERC-CRSNG/annonce-annonce_eng.pdf).

I enclose a copy of the site visit report and the *NSERC Guidelines for External Reviewers and Site Visit Committee Members*. The site visit report provides comments on the application, in addition to a funding recommendation. If you wish to receive a copy of these documents in the other official language, please inform NSERC.

Once all conditions have been met, the letters of award for the first instalments of the grants (salary and research) supporting this Chair will be released.

Do not hesitate to contact Lauren Remmler at (613) 992-3447 or at [Lauren.Remmler@nserc-crnsng.gc.ca](mailto:Lauren.Remmler@nserc-crnsng.gc.ca) if you need any further assistance.

Sincerely,



Pamela Moss,  
Director,  
Manufacturing, Communications and Technologies (MCT) Division  
Research Partnerships

PM/gp

Encl.

Cc: L.A. Rusch, Laval  
Research, Laval  
Finance, Laval  
Huawei Technologies Co., Ltd.  
Laval

## CONDITIONS OF THE INDUSTRIAL RESEARCH CHAIR AWARD

### 1. Funding Allocation

The award comprises two distinct components, one for salary and the other for research (including equipment), and funds are not transferable from one to the other. The salary component will be released in your name, as salary recipient, and the research component will be released in the name of the Chairholder. It is proposed that the NSERC award and the cash contributions from the partner organization be split as follows between the salary and the research components. If this is not satisfactory to the university, please contact Lauren Remmler as soon as possible.

#### Senior Chairholder

##### Salary:

	NSERC <sup>*,**</sup>	Huawei Technologies	Total
Year 1			\$ 23,000
Year 2			\$ 23,000
Year 3			\$ 23,000
Year 4			\$224,000
Year 5			\$224,000
Total			\$517,000

\* Subject to confirmation of starting salary level.

\*\* NSERC will not be responsible for any salary increments over the course of the award due to merit, progression through the ranks, or inflation.

##### Research:

	NSERC	Huawei Technologies	Total
Year 1			\$ 545,218
Year 2			\$ 545,218
Year 3			\$ 545,218
Year 4			\$ 500,870
Year 5			\$ 500,870
Total			\$2,637,394

##### In-kind contributions

	Huawei Technologies
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
Total	

## 2. NSERC's Chairholder Database

The completion of a Chairholder Profile Questionnaire is mandatory. A template indicating the required information will be sent by e-mail to the Chairholder. Contact Lauren Remmler if you do not receive this template **by October 17, 2019**.

## 3. Incrementality

As Dr. L.A. Rusch is an internal candidate, NSERC guidelines require that the university allocate her freed-up salary funds toward, at the minimum, the creation of one tenure-track faculty position for the duration of the Chair. This new position cannot be contingent on the availability of funds. The funds freed up from the salary of the internal candidate must be used toward the salary of the new tenure or tenure-track position. **Any leftover funds, and any funds freed up (minus any reasonable recruitment costs or costs associated with an enticement package) before the new tenure or tenure-track position is filled, must be allocated to the direct costs of the Chair's research program on a monthly pro-rata basis.** The candidate for the new faculty position must have the mandate and qualifications required to conduct independent research and supervise graduate students.

Please contact Lauren Remmler with the details, including a timeline, on how the university intends to fulfil this condition. The university should indicate how, until the position is filled, the freed-up funds will be allocated to the Chair's research program. **NSERC must be notified once the position is filled and provided with a copy of the CV of the new faculty member.**

## 4. Reporting on Chair Progress

All Chairholders and supporting organizations are required to provide NSERC with periodic reports of progress. The schedule, review mechanism, and intent of the reports are as follows:

- 1) 18 months: first progress report to monitor the steps that have been taken to establish the Chair's research program and to identify any potential problems. At NSERC's discretion, this report may be peer reviewed.
- 2) 36 months: second progress report, to monitor progress in establishing and carrying out the Chair's research program and to identify any potential problems. At NSERC's discretion, this report may be peer reviewed.

## 5. Applying for other NSERC Grants

Chairholders are eligible to hold any other NSERC awards during the term of the Chair.

## 6. Concurrent Awards

A Canada Research Chair (CRC) or a Canada Excellence Research Chair (CERC) may be held concurrently with an Industrial Research Chair at any point during an IRC award, as long as the IRC program objectives are respected. If the Industrial Research Chair incumbent holds or expects to hold a CRC or a CERC, the university must confirm with the NSERC Program Officer that the conditions for concurrent chair awards have been met.



## **7. No Possibility to Renew**

With the implementation of the new Research Partnerships program, NSERC has established a transition plan for the IRC Grants program. According to this transition plan, NSERC will not accept a renewal application for an additional term of your Industrial Research Chair, if the latter is confirmed, i.e., if all the conditions of the present award are satisfied. You will be able to seek further support to the research activities through the new Research Partnerships program.

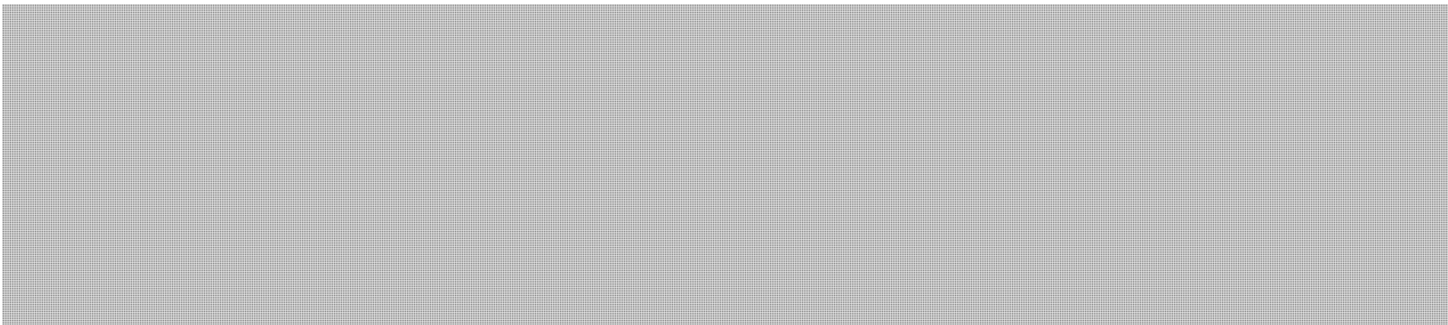
**Remmler, Lauren**

---

**From:** [REDACTED]  
**Sent:** October 29, 2019 9:03 AM  
**To:** Remmler, Lauren  
**Cc:** [REDACTED]; [REDACTED]  
**Subject:** NSERC/Huawei Industrial Research Chair in Fiber Optic Communications Systems  
**Attachments:** Confirmation d'emploi Rusch.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Dear Lauren,



Best regards,

[REDACTED]

[REDACTED]

**Bureau des chaires et entités structurantes  
Vice-rectorat à la recherche, à la création et à l'innovation  
Université Laval**

T 418 656-2131, poste [REDACTED]

Pavillon Sciences de l'éducation, local [REDACTED]  
Québec (Québec) G1V 0A6

[Avis relatif à la confidentialité](#)

Personal identification no. (PIN)

Family name of applicant

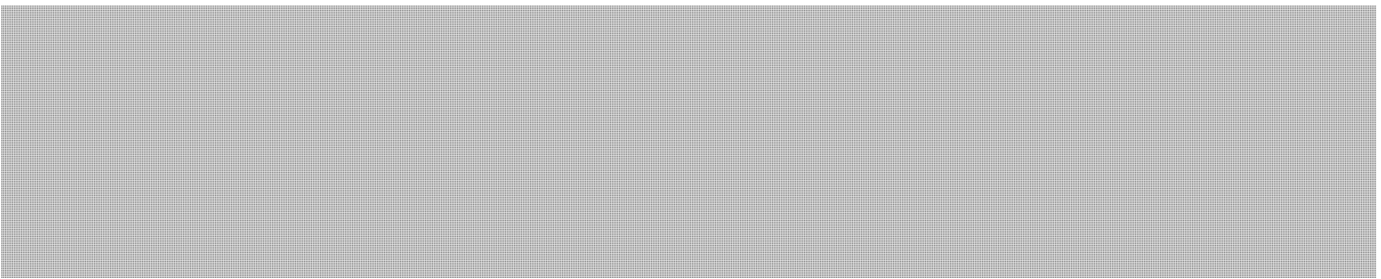
Valid



Lapointe

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

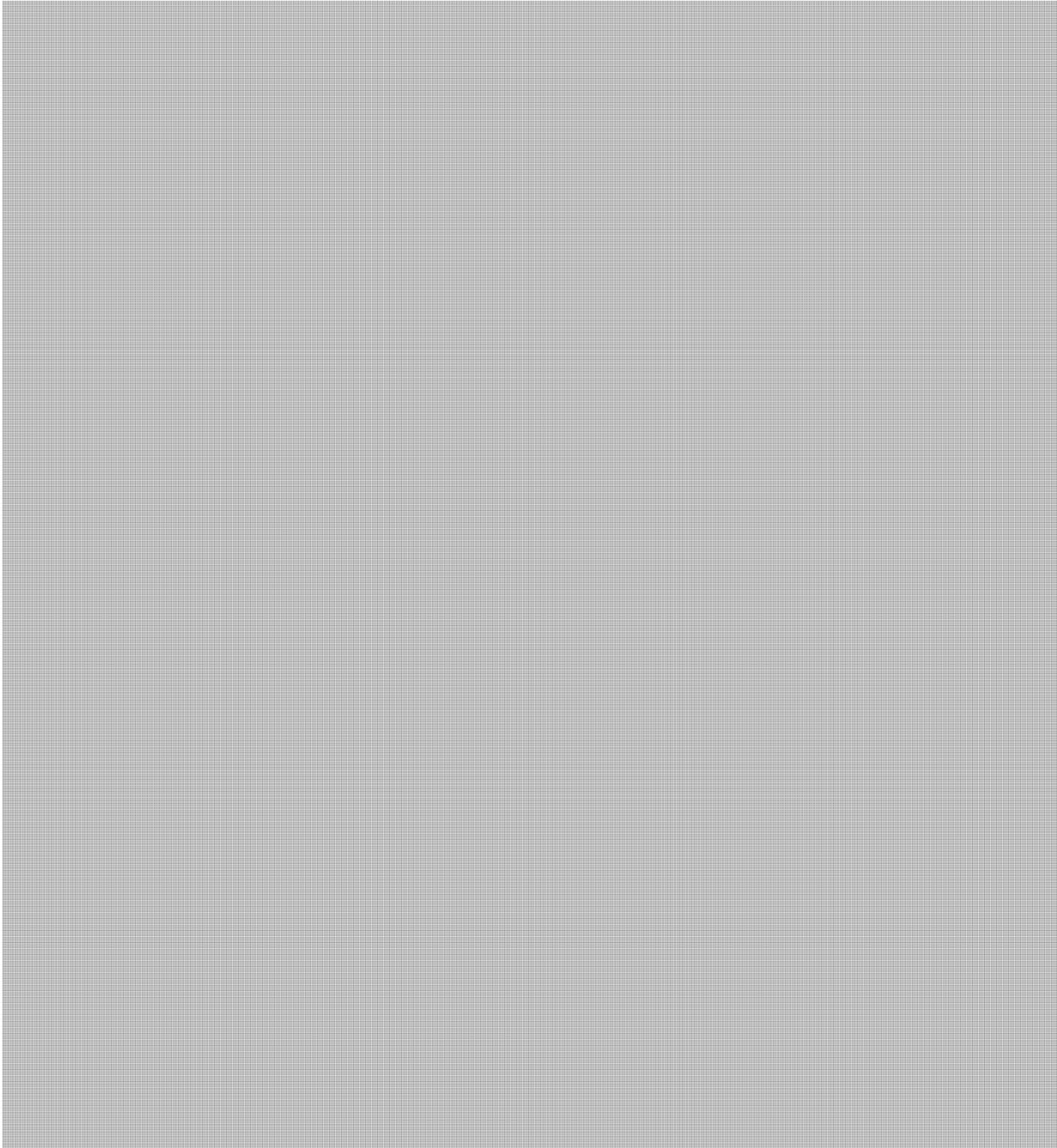


NSERC/Huawei Industrial Research Chair in  
*Fiber Optic Communications Systems (FOCUS Systems)*

Leslie A. Rusch  
PIN [REDACTED]

**Section I. Proposal for establishing a chair**

**CHAIR RATIONALE**



NSERC/Huawei Industrial Research Chair in  
*Fiber Optic Communications Systems (FOCUS Systems)*

Leslie A. Rusch

PIN 



**RESEARCH MANAGEMENT**



s.13(1)(c)

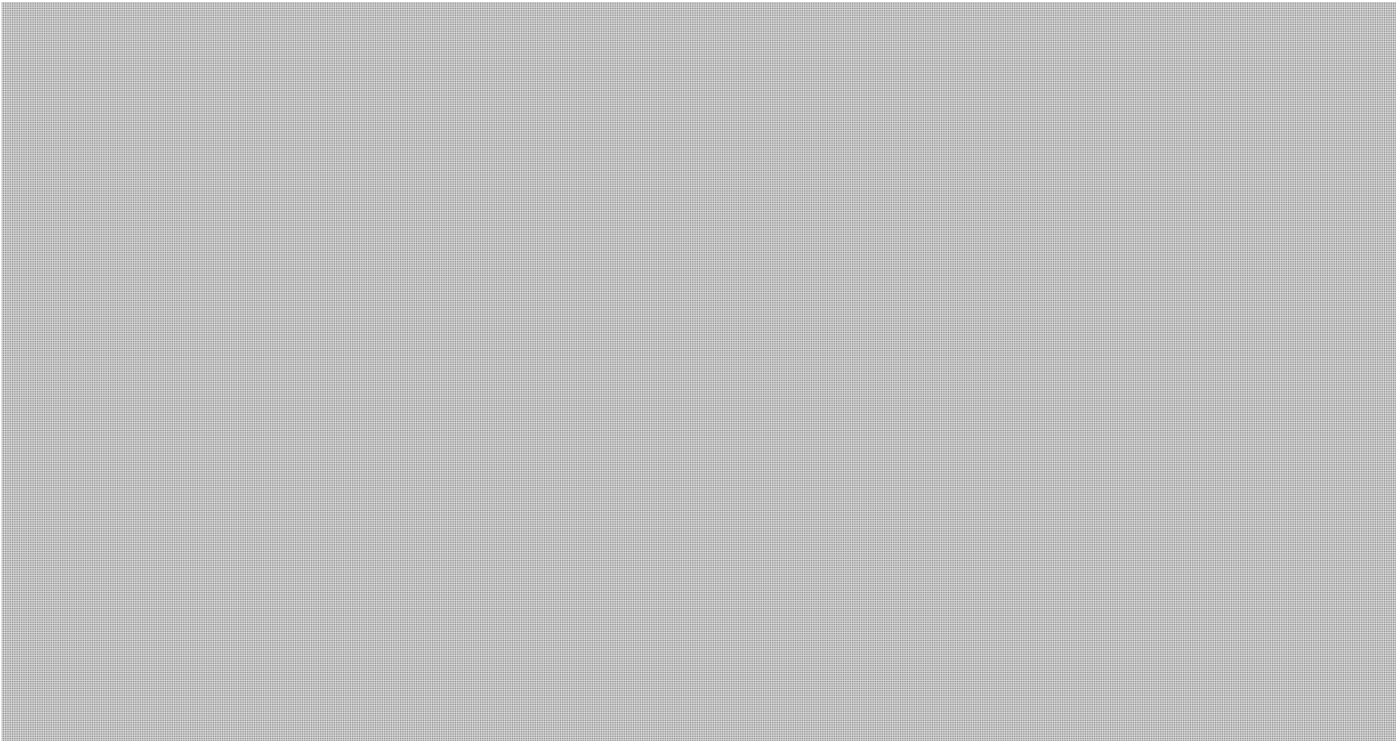
s.19(1)

s.20(1)(b)

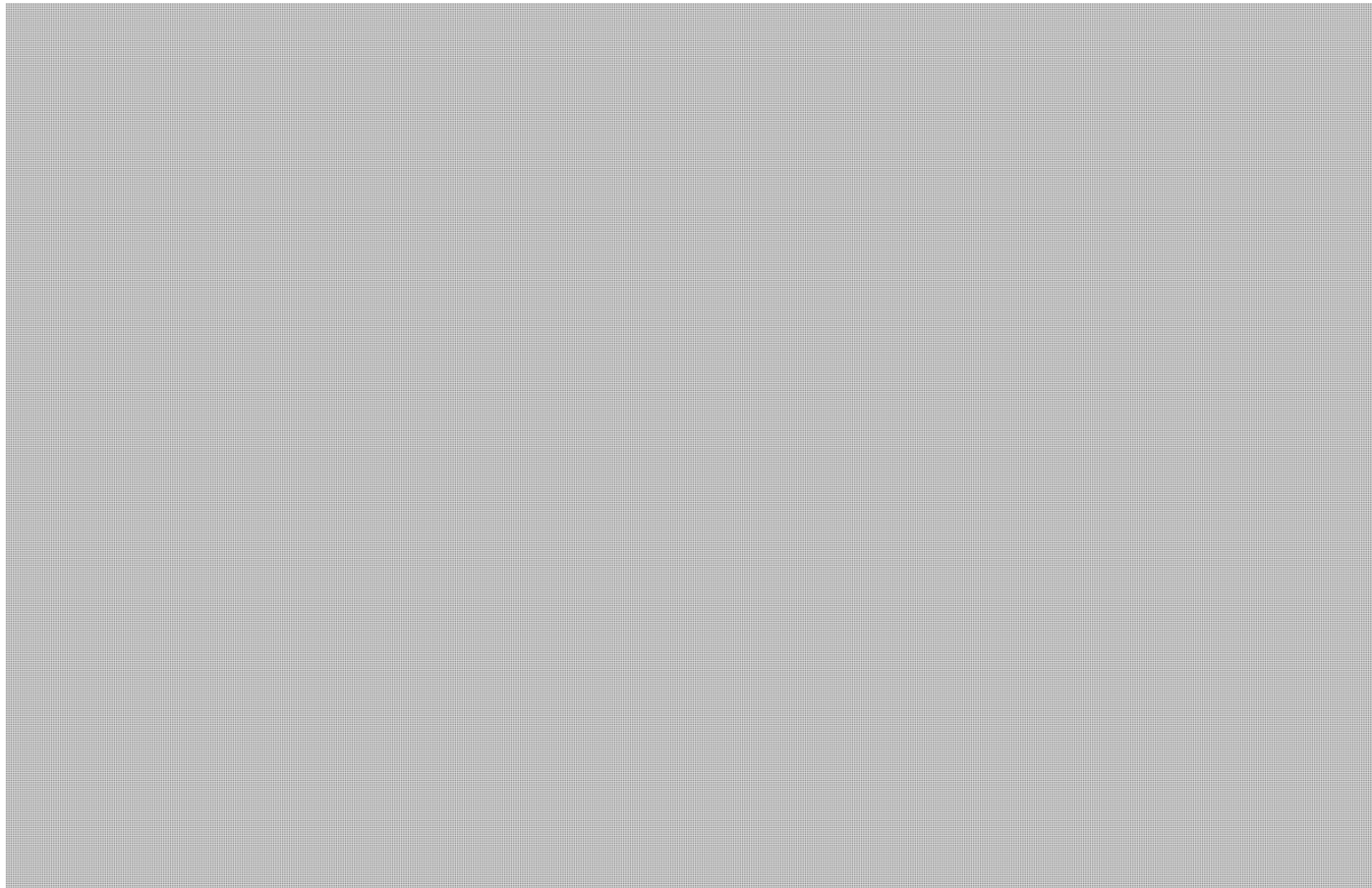
s.20(1)(c)

NSERC/Huawei Industrial Research Chair in  
*Fiber Optic Communications Systems (FOCUS Systems)*

Leslie A. Rusch  
PIN [REDACTED]



**RESEARCH CAPACITY**



October 3, 2019

File: IRC 537311 - 18

**PROTECTED B**

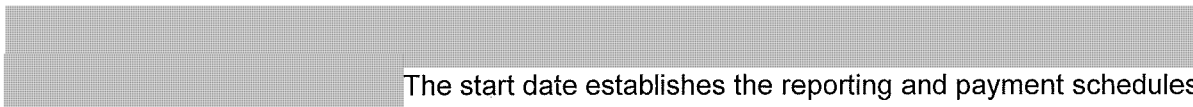
Dr. L. Lapointe  
Département de Biologie  
Université Laval  
D-PAVILLON Alexandre VACHON  
QUEBEC QC G1V 0A6

Dear Dr. Lapointe:

**Re: Industrial Research Chairs - Regular (IRC) entitled "NSERC/Huawei Industrial Research Chair in Fiber Optic Communications Systems (FOCUS Systems)", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved the establishment of the "NSERC/Huawei Industrial Research Chair in Fiber Optic Communications Systems (FOCUS Systems)" at the Université Laval with Dr. L.A. Rusch as Senior Chairholder.

The award is conditional upon:



The start date establishes the reporting and payment schedules.

**Once the award is confirmed, NSERC Communications must be contacted before making any public announcement of the Chair.** General guidelines for announcing major NSERC awards can be found at [http://www.nserc-crsng.gc.ca/\\_doc/NSERC-CRSNG/annonce-annonce\\_eng.pdf](http://www.nserc-crsng.gc.ca/_doc/NSERC-CRSNG/annonce-annonce_eng.pdf).

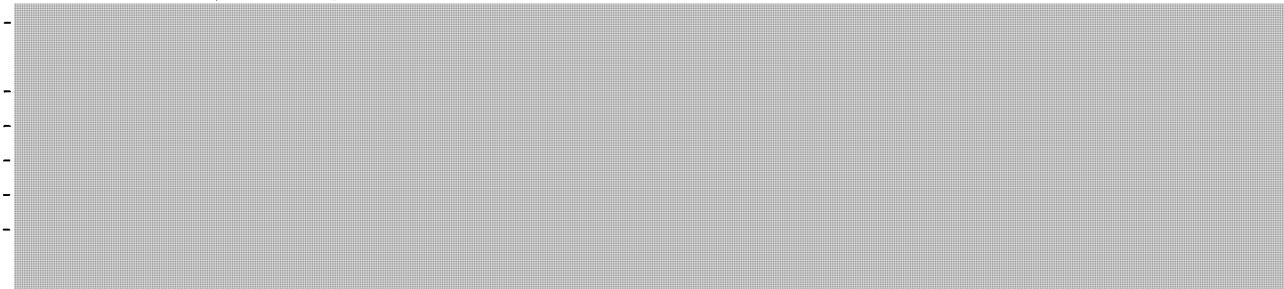
**Remmler,Lauren**

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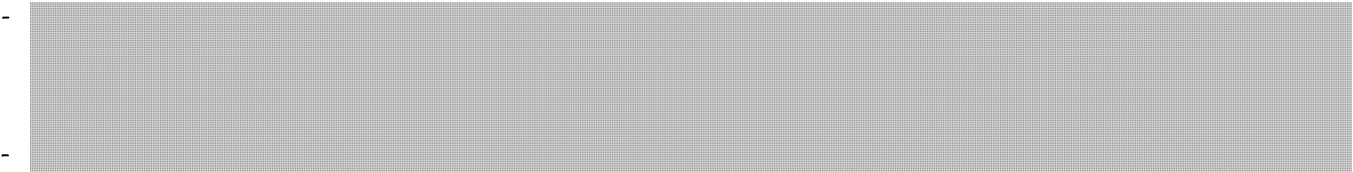
**From:** Remmler,Lauren  
**Sent:** October 18, 2019 11:22 AM  
**To:** Remmler,Lauren  
**Subject:** RE: application for an NSERC industrial research chair

**Categories:** Save to Enterprise

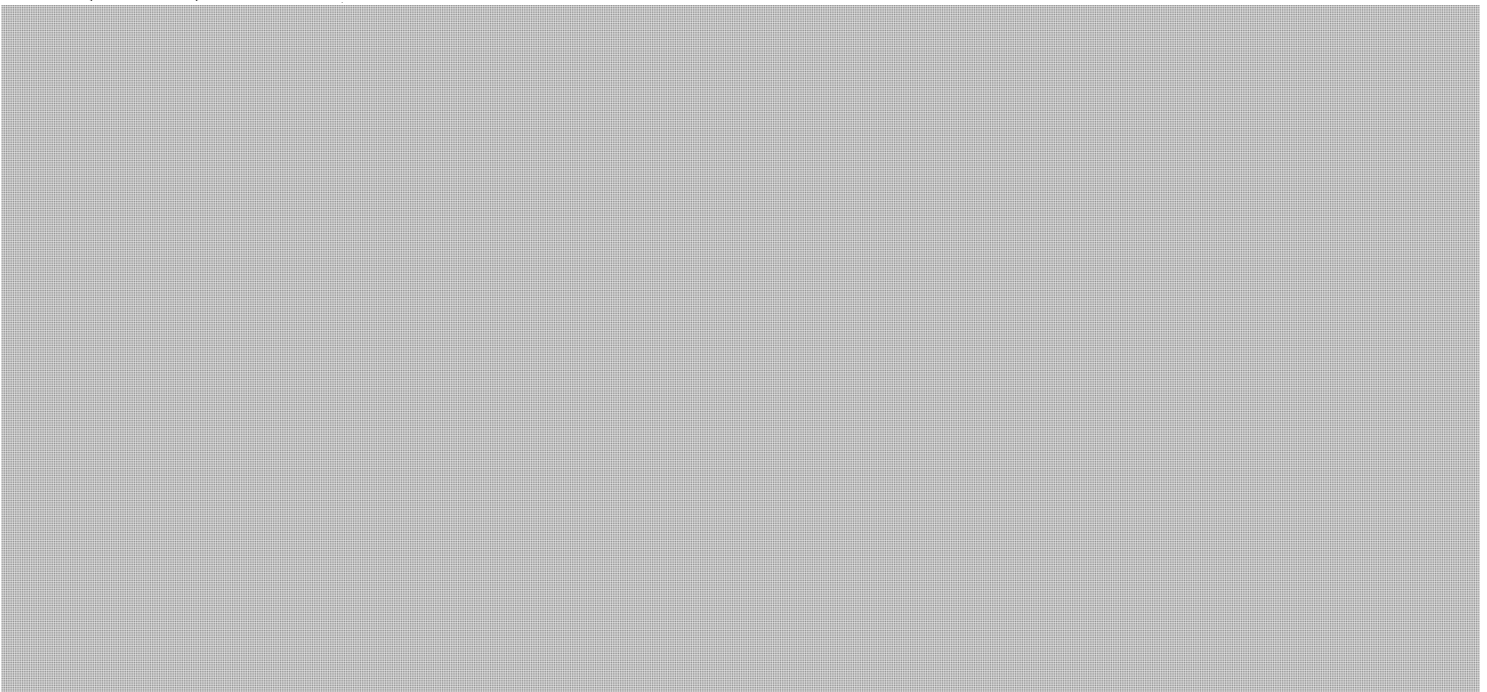
The proposal has been released back into the system for you to be able to make the edits we discussed yesterday, which I've summarized briefly in bullet points below:



Also:



Finally, to recap on site visit / ACUIG scheduling:





[Redacted]

[Redacted]

[Redacted]

Lauren

---

**From:** [Redacted]  
**Sent:** Monday, February 18, 2019 4:41 PM  
**To:** Remmler, Lauren  
**Cc:** Terfa Dibaba, Talile  
**Subject:** RE: application for an NSERC industrial research chair

Dear Lauren,

[Redacted]

Regards, [Redacted]

[Redacted]

Electrical and Computer Engineering Department  
Université Laval  
1065 rue de la Médecine  
Québec, Canada, G1V 0A6  
tél: [Redacted]  
fax: (418) 656-3159  
email: [Redacted]  
<http://ocl.gel.ulaval.ca/>

---

**From:** Remmler,Lauren <Lauren.Remmler@NSERC-CRSNG.GC.CA>  
**Sent:** Monday, February 18, 2019 12:40 PM  
**To:** [REDACTED]  
**Cc:** Terfa Dibaba,Talile <Talile.TerfaDibaba@NSERC-CRSNG.GC.CA>  
**Subject:** RE: application for an NSERC industrial research chair

Dear [REDACTED]

[REDACTED]

Sincerely,  
Lauren

**Lauren Remmler**  
Manager, Research Partnerships | Gestionnaire, Partenariats de recherche  
[Natural Sciences and Engineering Research Council of Canada](#) |  
[Conseil de recherches en sciences naturelles et en génie du Canada](#)

**From:** [REDACTED]  
**Sent:** Thursday, February 14, 2019 4:21 PM  
**To:** Delisle,Roger  
**Subject:** RE: application for an NSERC industrial research chair

Dear Roger,

[REDACTED]

Thanks for your support,

[REDACTED]

---

[REDACTED]

Electrical and Computer Engineering Department  
Université Laval

s.13(1)(c)

s.19(1)

s.20(1)(b)

s.20(1)(c)

1065 rue de la Médecine  
Québec, Canada, G1V 0A6  
tél: [REDACTED]  
fax:(418)656-3159  
email: [REDACTED]  
<http://ocl.gel.ulaval.ca/>

---

**From:** Delisle,Roger <[Roger.Delisle@NSERC-CRSNG.GC.CA](mailto:Roger.Delisle@NSERC-CRSNG.GC.CA)>  
**Sent:** Monday, November 19, 2018 12:01 PM  
**To:** [REDACTED]  
**Subject:** RE: application for an NSERC industrial research chair

Hi [REDACTED]



Kind regards,  
Roger.

----

**Roger Delisle**

**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

[roger.delisle@nserc-crsng.gc.ca](mailto:roger.delisle@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-943-1386  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)



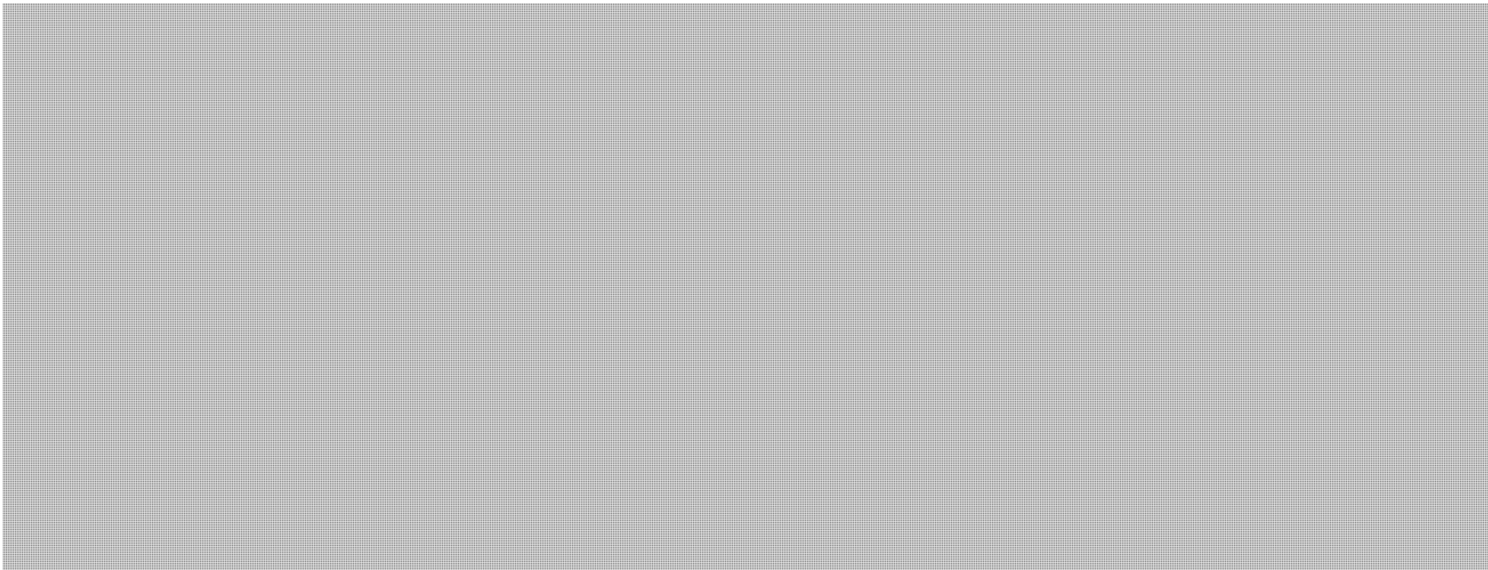
BREAKTHROUGH  
ANSWERS  
TO TIMELESS  
QUESTIONS

DES RÉPONSES  
INNOVANTES  
À DE GRANDES  
QUESTIONS

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

---

**From:** [REDACTED]  
**Sent:** Friday, November 16, 2018 4:21 PM  
**To:** Delisle, Roger  
**Subject:** RE: application for an NSERC industrial research chair



**From:** Delisle,Roger <Roger.Delisle@NSERC-CRSNG.GC.CA>  
**Sent:** Friday, November 16, 2018 2:43 PM  
**To:** [REDACTED]  
**Subject:** FW: application for an NSERC industrial research chair

Hello [REDACTED]  
It's great to hear from you. I've been assigned your request. It would be my pleasure to assist you in your efforts. Please let me know how I can help.

Kind regards,  
Roger.

----

**Roger Delisle**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
[roger.delisle@nserc-crsng.gc.ca](mailto:roger.delisle@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-943-1386  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)



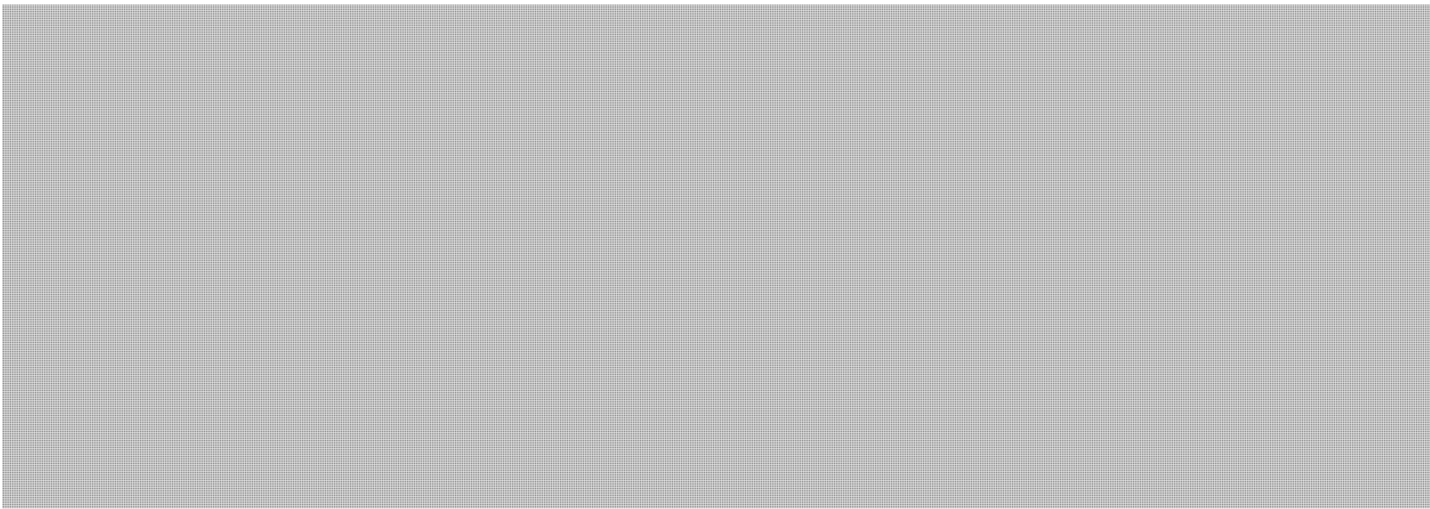
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

---

**From:** [REDACTED]  
**Sent:** Thursday, November 15, 2018 9:25 AM  
**To:** Z-RPP

**Cc:** FSG Vice-Doyenne Recherche; [redacted]  
**Subject:** application for an NSERC industrial research chair

To Whom It May Concern,



Thank you for your assistance,



Département de génie électrique et de génie informatique  
Université Laval  
1065 rue de la Médecine  
Québec, Canada, G1V 0A6  
tél: [redacted]  
fax:(418)656-3159  
email: [redacted]  
<http://ocl.gel.ulaval.ca/>

---

**Page 369**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Benefit to Canada**





**Conclusions and Recommendations**

**Recommended for funding as requested**

Recommended for funding at a reduced level

Not recommended for funding

**Amounts requested and recommended:**

Year	Original Amount Requested	Revised Amount Requested	Partner Cash	Partner In-kind (Total)	Partner In-kind (Eligible)	Amount Recommended
1						\$284,109
2						\$284,109
3						\$284,109
4						\$362,435
5						\$362,435
<b>Totals</b>						<b>\$1,577,197</b>

**RECOMMENDED:**

2019-09-19

**X** Lauren Remmler

Manager  
Research Partnerships  
Signed by: Remmler, Lauren

**ENDORSED:**

N/A

**APPROVED:**

Pursuant to Section 32 of the Financial Administration Act, I certify that the funds are available for the recommended award payment, including if the award requires conditions to be met.

Pursuant to Section 34 of the Financial Administration Act, I certify that the recipient of the award payment is eligible at this time to receive funding.

2019/09/19

**X** Pamela A. Moss

Vice-President  
Research Partnerships  
Signed by: Moss, Pamela

**Williams, Sylvania**

---

**From:** Williams, Sylvania  
**Sent:** Wednesday, May 15, 2019 3:47 PM  
**To:** [Redacted]  
**Subject:** RE: NSERC CRD #531861-18 Conditional Offer - D. Toman with Huawei

Dear [Redacted]

I will prepare an award letter with a start date of June 1, 2019.

Regards, Sylvania

-----Original Message-----

**From:** [Redacted]  
**Sent:** Wednesday, May 15, 2019 3:24 PM  
**To:** Williams, Sylvania  
**Cc:** [Redacted]  
**Subject:** Re: NSERC CRD #531861-18 Conditional Offer - D. Toman with Huawei

Dear Sylvania:

[Redacted]

thanks again and best regards,

- [Redacted]

On 2019-05-06, at 3:08 PM, "Williams, Sylvania" <[Sylvia.Williams@NSERC-CRSNG.GC.CA](mailto:Sylvia.Williams@NSERC-CRSNG.GC.CA)> wrote:

> Dear [Redacted]

>  
> [Redacted]  
>  
> [Redacted]  
>  
> [Redacted]  
>  
> [Redacted]  
>  
> [Redacted]

> Best regards,

> Sylvania

>  
> From: [Redacted]

> Sent: Thursday, May 02, 2019 11:08 AM



**Williams, Sylvia**

**From:** Williams, Sylvia  
**Sent:** Monday, May 06, 2019 3:09 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: NSERC CRD #531861-18 Conditional Offer - D. Toman with Huawei

Dear [Redacted]

[Redacted]

Best regards,  
Sylvia

Duplicate email / Courriel en double

**From:** [Redacted]  
**Sent:** Thursday, May 02, 2019 11:08 AM  
**To:** Williams, Sylvia  
**Cc:** [Redacted]  
**Subject:** NSERC CRD #531861-18 Conditional Offer - D. Toman with Huawei

Good Morning Sylvia

I hope you are doing well.

NSERC CRD: "Ontology Based Data Access on Big Data Platforms"

[Redacted]

Thanks in Advance and have a great day.

[Redacted]

*Have a Wonderful Day*

[Redacted]

Research Partnerships  
Office of Research, East Campus 5 Room [Redacted]  
University of Waterloo

200 University Ave W  
Waterloo, ON N2L 3G1  
519-888-4567 X [REDACTED]  
Fax: 519-729-9971



"The information in this message, including any attachments, is privileged and may contain confidential information intended only for the person(s) named above. Any other distribution, copying or disclosure is strictly prohibited. If you are not the intended recipient or have received this message in error, please notify us immediately by reply email and permanently delete the original transmission from us, including any attachments, without making a copy. Thank you."



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)

s.20(1)(c)

April 17, 2019

File: CRDPJ 531861 - 18

**PROTECTED B**

Dr. D. Toman  
David R. Cheriton School of Computer  
Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Toman:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Ontology Based Data Access on Big Data Platforms" with Huawei Technologies  
Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.

[REDACTED]

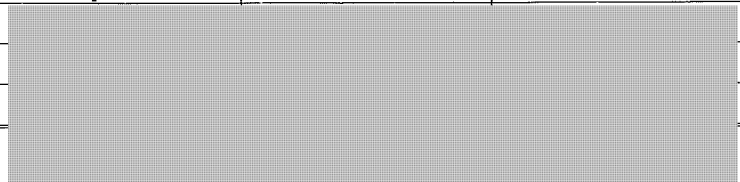
[REDACTED] The start date  
establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

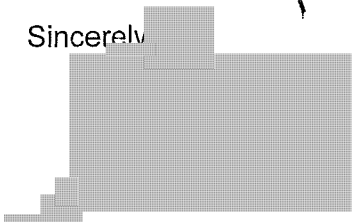
The cash commitments of NSERC and the partner(s) to this project are summarized below.

	<b>Original Amount Requested</b>	<b>Partner Cash</b>	<b>Partner In-kind</b>	<b>Amount Recommended</b>
<b>Year 1</b>				\$59,200
<b>Year 2</b>				\$74,200
<b>Year 3</b>				\$74,200
<b>TOTAL</b>				\$207,600

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,





Sylvia Williams  
Senior Program Officer  
Research Partnerships

Telephone: (613) 996-2571  
Fax: (613) 992-5337  
E-Mail: Sylvia.Williams@nserc-crsng.gc.ca

SW/ph

Enclosure

cc:  Research, Waterloo  
 Huawei Technologies Co., Ltd.

Personal identification no. (PIN)

Family name of applicant

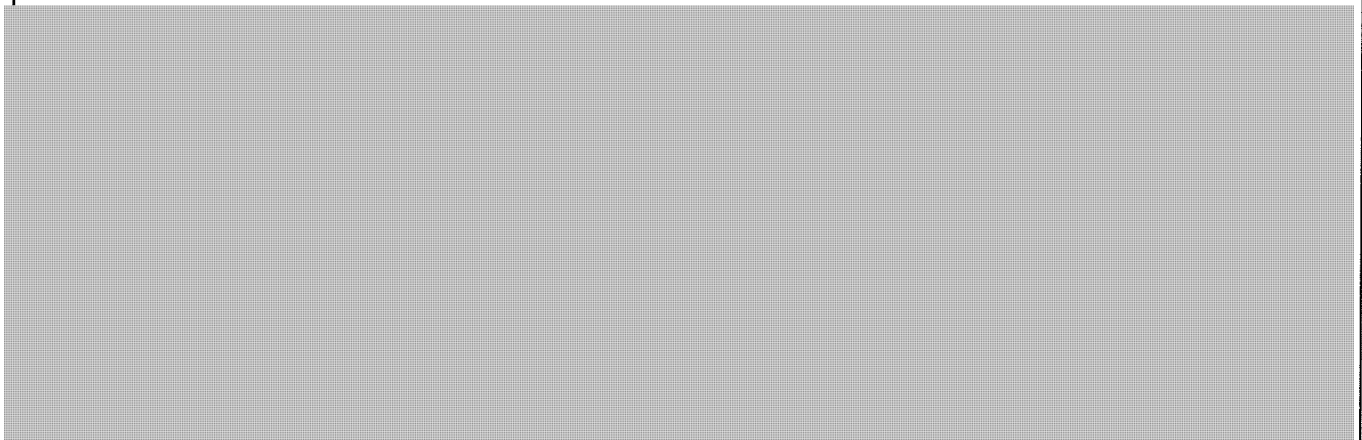
Valid



Toman

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.





### IP Checklist

**Applicant/AID: Yu 503886-16**

IP Agreement not required

#### IP Agreement Mandatory Elements

<b>1. Timely exploitation – only for exclusive license or assignment</b>	
<b>2. Protect IP Assets of Partners</b>	
➤ <b>Background IP</b>	
➤ <b>Review of publications for partner’s confidential information</b>	
<b>3. Maximum of 6 month publication delay</b>	
<b>4. No delay of student thesis defence</b>	
<b>5. License back to institution/researchers for non-commercial purposes</b>	


#### Type of Access

<b>Unrestricted dissemination</b>	
<b>Non-exclusive licensing</b>	
<b>Non-exclusive licensing with option for negotiating exclusive license</b>	
<b>Exclusive license</b>	
<b>Joint ownership</b>	
<b>Partial assignment of ownership</b>	
<b>Full assignment of ownership</b>	
<b>Option to negotiate a license</b>	
<b>None</b>	

#### Other

<b>References the project</b>	
<b>Duration</b>	
<b>Contributions match proposal</b>	
<b>All companies have signed</b>	
<b>All universities have signed</b>	

Update the internal tab in Namis and place original IP checklist on file

  
**Lauren J [redacted]**  
Senior Program Officer

July 4, 2017

Date

*Grant start date:*  
*Sept 1, 2017*

**Pages 380 to / à 381  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

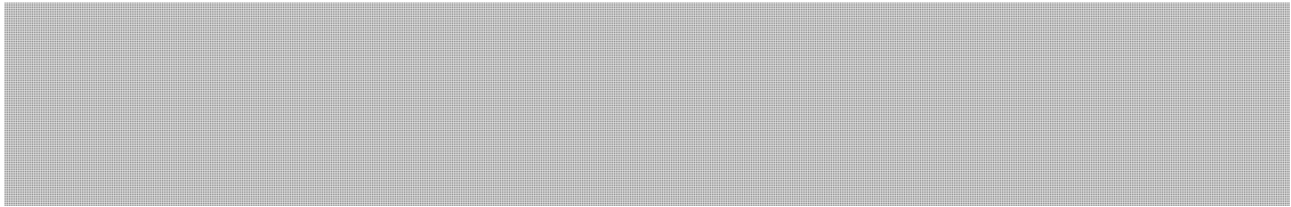
**Page 382**

**is withheld pursuant to sections  
est retenue en vertu des articles**

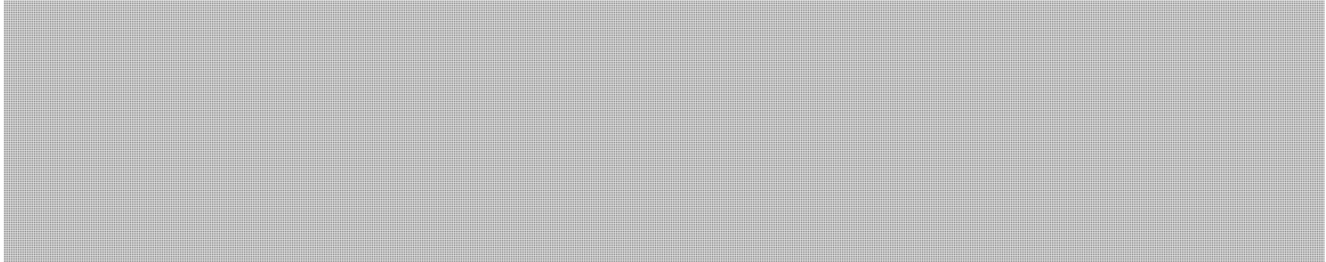
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

PIN: [REDACTED]	YU, Wei
-----------------	---------



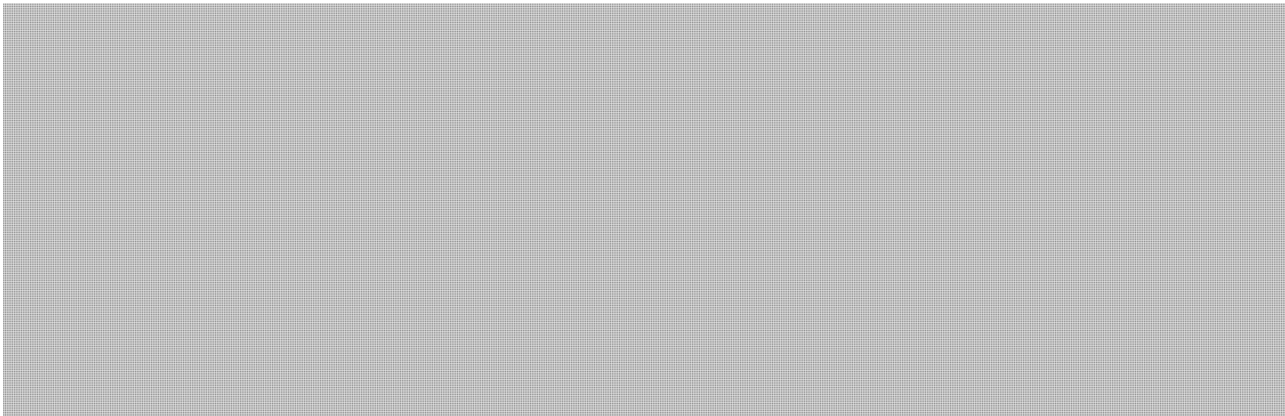
**VI. Training of Highly Qualified Personnel (HQP)**



**VII. Value of Results and Industrial Relevance**



**VIII. Benefit to Canada**



9 (SNG, CRD, IZI, IRC, DND)

Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Yu
--	------------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

[REDACTED]

**Terfa Dibaba, Talile**

---

**From:** [Redacted]  
**Sent:** Friday, June 23, 2017 2:00 PM  
**To:** Ivan, Marius  
**Cc:** Terfa Dibaba, Talile; [Redacted]  
**Subject:** NSERC CRDPJ 503886-16 Yu  
**Attachments:** YB2015110112\_U of Toronto R&D Agreement\_December 17, 2015 Fully Executed.pdf; Fully Executed Amendment\_Huawei\_Yu.pdf

Hi Marius,

[Redacted]

[Redacted]

Thanks,

[Redacted]

Innovations & Partnerships Office  
University of Toronto  
Banting Institute, 100 College St., Suite [Redacted]  
Toronto, ON M5G 1L5  
P. 416-978-1512 F. 416-978-6052

[Redacted]

*Does your research agreement require a Confidential Information & Intellectual Property ("CIIP") Agreement? Many research agreements contain terms or provisions which require the use of a "CIIP" by the Principal Investigator. Learn more here: <http://www.research.utoronto.ca/forms/confidential-information-intellectual-property-agreement/>*

**Lapointe, Kevin**

---

**From:** Ivan, Marius  
**Sent:** June 23, 2017 2:08 PM  
**To:** [REDACTED]  
**Cc:** Terfa Dibaba, Talile; Remmler, Lauren  
**Subject:** FW: NSERC CRDPJ 503886-16 Yu  
**Attachments:** YB2015110112\_U of Toronto R&D Agreement\_December 17, 2015 Fully Executed.pdf; Fully Executed Amendment\_Huawei\_Yu.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Dear [REDACTED]

Thank you for sending the RA for this CRD proposal. I am forwarding your email to my colleague Lauren Remmler, who is now responsible for Dr. Yu's CRD project.

Best,  
Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG  
[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5  
Tel. 613-996-0923  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)

---

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** Friday, June 23, 2017 2:00 PM  
**To:** Ivan, Marius  
**Cc:** Terfa Dibaba, Talile; [REDACTED]  
**Subject:** NSERC CRDPJ 503886-16 Yu

Hi Marius,

[REDACTED]

Thanks,

[REDACTED]

Research Partnerships Officer  
Innovations & Partnerships Office  
University of Toronto  
Banting Institute, 100 College St., Suite [REDACTED]  
Toronto, ON M5G 1L5  
P. 416-978-1512 F. 416-978-6052  
[REDACTED]

*Does your research agreement require a Confidential Information & Intellectual Property (“CIIP”) Agreement? Many research agreements contain terms or provisions which require the use of a “CIIP” by the Principal Investigator. Learn more here: <http://www.research.utoronto.ca/forms/confidential-information-intellectual-property-agreement/>*



Remmler, Lauren

---

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Wednesday, July 05, 2017 3:48 PM  
**To:** Remmler, Lauren  
**Subject:** Re: NSERC CRDPJ 503886-16 Yu

Dear Lauren:

[REDACTED]

Thank you for your assistance.

[REDACTED]

On 2017-07-04 11:33 AM, Remmler, Lauren wrote:

Hi [REDACTED]

[REDACTED]

Regards,  
Lauren

**Lauren Remmler, MSc**

**Senior Program Officer | Administratrice principale de programme**

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** Ivan, Marius

Duplicate email / Courriel en double

**Sent:** Friday, June 23, 2017 2:08 PM

**To:** [REDACTED]

**Cc:** Terfa Dibaba, Talile; Remmler, Lauren

**Subject:** FW: NSERC CRDPJ 503886-16 Yu

Dear [REDACTED]

Thank you for sending the RA for this CRD proposal. I am forwarding your email to my colleague Lauren Remmler, who is now responsible for Dr. Yu's CRD project.

Best,  
Marius

s.19(1)  
s.20(1)(b)  
s.20(1)(c)  
s.21(1)(b)

**Remmler, Lauren**

Duplicate email / Courriel en double

**From:** Ivan, Marius  
**Sent:** Wednesday, August 02, 2017 2:28 PM  
**To:** Remmler, Lauren  
**Subject:** RE: Wei Yu CRD503886-16

**Categories:** Save to Enterprise

Hi Lauren,

Best,  
Marius

**Marius G. Ivan, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division |  
Division de la Fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
NSERC | CRSNG  
[marius.ivan@nserc-crsng.gc.ca](mailto:marius.ivan@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5  
Tel. 613-996-0923  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)



---

**From:** Remmler, Lauren  
**Sent:** Wednesday, August 02, 2017 2:24 PM  
**To:** Ivan, Marius  
**Subject:** Wei Yu CRD503886-16

Hi Marius,

Thanks!  
Lauren

**Lauren Remmler, MSc**

**Senior Program Officer | Administratrice principale de programme**

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

## IP Checklist

X. Wu 517550 - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
➤ Background IP	
➤ Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file

The [redacted] Plan Attachment was revised and the final was acceptable.

[redacted]  
[redacted]  
[redacted] Williams  
Senior Program Officer

2018/03/28

Date

**Pages 448 to / à 449  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 450**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 481 to / à 483  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 484**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



## IP Checklist

L. Lampe 517950 - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership (Huawei owned)	

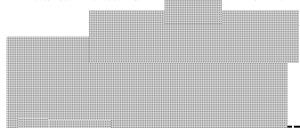
Update the internal tab in Namis and place original IP checklist on file

*SPO's note on the attachment for the CRD: There are some differences between the Huawei SOA and the CRD; however, the milestones do map properly. It is assumed to be the same research.*

Term – is defined by the end of the NSERC grant.

Start date:

*May 1 / 2018*

  
\_\_\_\_\_  
Williams  
Program Officer

*2018/05/01*

Date

*NSERC/CRSNG encourages and facilitates scholarly journal publishing. Other payments cannot be used for research, industry*

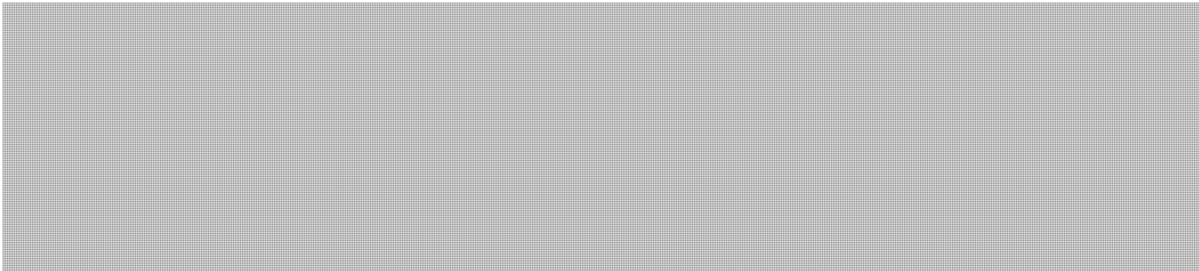
**From:** [redacted]  
**Sent:** Tuesday, May 01, 2018 1:23 PM  
**To:** [redacted]  
**Cc:** Williams,Sylvia; [redacted]  
**Subject:** Re: IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear all,

Thanks a lot,

On May 1, 2018, at 8:45 AM, [redacted] wrote:

Dear Sylvia,



Should you have any questions, please do not hesitate to contact us.

Thanks,

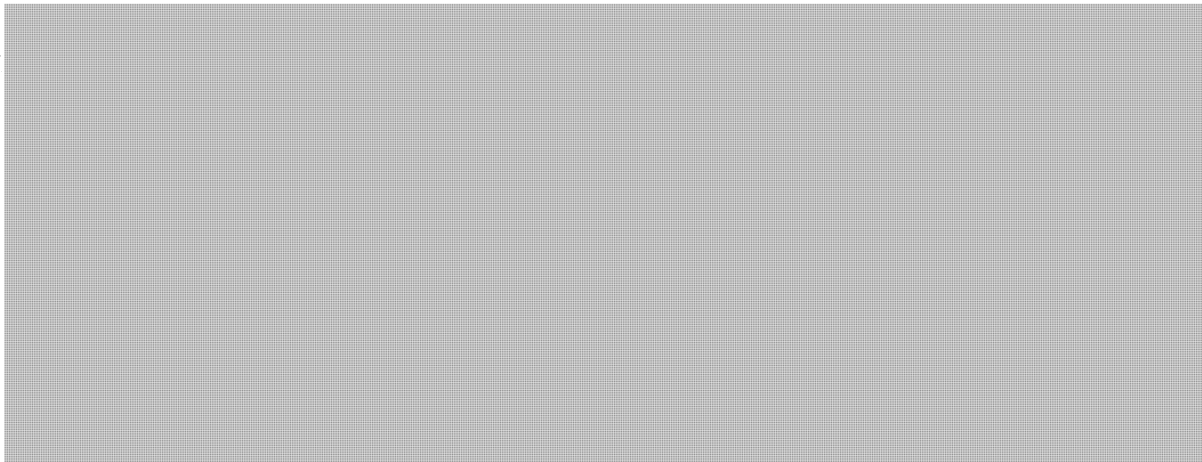
[redacted]  
-----  
[redacted]  
Grant Applications Officer, Office of Research Services  
Room [redacted] - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
☎ [redacted] 604.822.5093 | 🌐 [www.ors.ubc.ca](http://www.ors.ubc.ca)

<image001.png>

**From:** Williams,Sylvia [mailto:Sylvia.Williams@NSERC-CRSNG.GC.CA]  
**Sent:** May 1, 2018 8:12 AM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear [redacted]

Thanks very much, I have reviewed the document and it is fine now.



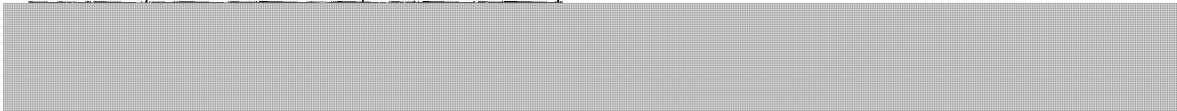
Thanks very much in advance.  
Sylvia

---

**From:** [redacted]  
**Sent:** Friday, April 20, 2018 12:03 PM  
**To:** Williams,Sylvia  
**Cc:** [redacted]  
**Subject:** RE: Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)



We look forward to receiving the final award letter from NSERC soon.

Thanks & regards,



Natural & Applied Sciences  
Office of Research Services  
Room [redacted] - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
[redacted] 604.822.5093 | [www.ors.ubc.ca](http://www.ors.ubc.ca)

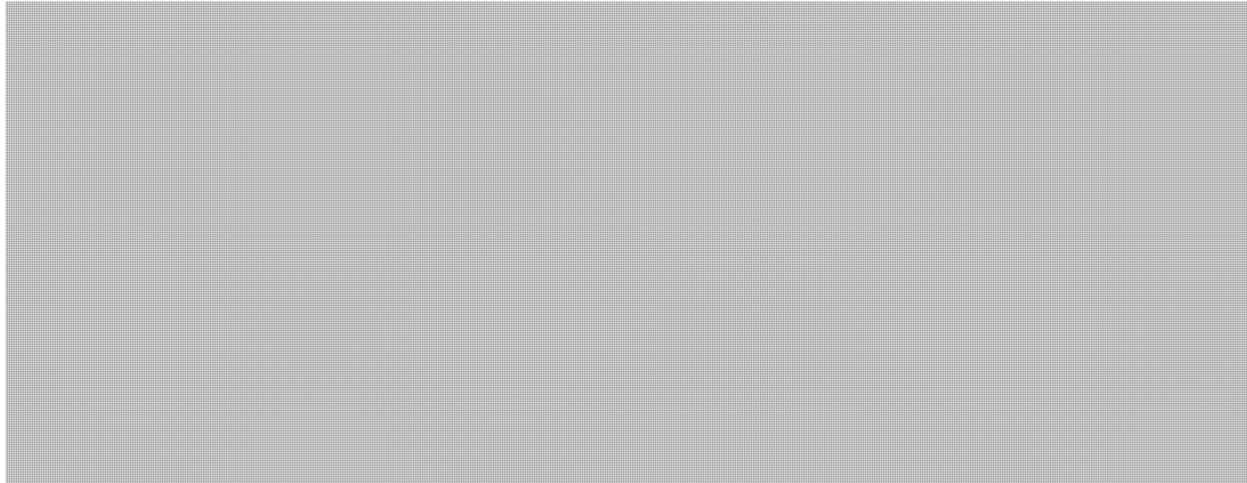
<image001.png>

---

**From:** Williams,Sylvia [<mailto:Sylvia.Williams@NSERC-CRSNG.GC.CA>]  
**Sent:** March 28, 2018 8:35 AM  
**To:** [redacted]  
**Subject:** Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear [redacted]





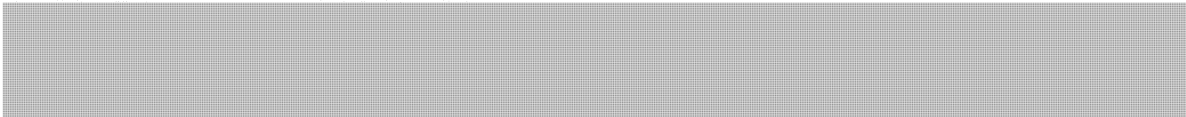
Thanks very much in advance.  
Sylvia

**Duplicate email / Courriel en double**

**From:** [redacted]  
**Sent:** Friday, April 20, 2018 12:03 PM  
**To:** Williams,Sylvia  
**Cc:** [redacted]  
**Subject:** RE: Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear Sylvia,

Re: [NSERC/CRDPJ 517950-17 \(UBC #F17-05326\)](#)



We look forward to receiving the final award letter from NSERC soon.

Thanks & regards,



Natural & Applied Sciences

Office of Research Services

Room [redacted] - 6190 Agronomy Road, Vancouver BC V6T 1Z3

[redacted] | 604.822.5093 | [www.ors.ubc.ca](http://www.ors.ubc.ca)

<image001.png>

**From:** Williams,Sylvia [<mailto:Sylvia.Williams@NSERC-CRSNG.GC.CA>] **Duplicate email / Courriel en double**  
**Sent:** March 28, 2018 8:35 AM  
**To:** Lei, Donna [redacted]  
**Subject:** Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/Lampe)

Dear [redacted]

Sorry this has taken a while.

Williams, Sylvia

**From:** Williams, Sylvia  
**Sent:** Tuesday, May 01, 2018 1:34 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/ [Redacted])

Dear [Redacted],

Thanks very much. I will set the start date at May 1, 2018.

Regards, Sylvia

---

**From:** [Redacted]  
**Sent:** Tuesday, May 01, 2018 1:23 PM  
**To:** [Redacted]  
**Cc:** Williams, Sylvia; [Redacted]  
**Subject:** Re: IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326, [Redacted])

Dear all,  
May 1st start date would be good.  
Thanks a lot,

On May 1, 2018, at 8:45 AM [Redacted] wrote:

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)  
 [Redacted]

Should you have any questions, please do not hesitate to contact us.

Thanks,

[Redacted]  
 Office of Research Services  
 Room [Redacted] - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
 [Redacted] | 604.822.5093 | www.ors.ubc.ca

<image001.png>

**Williams,Sylvia**

---

**From:** [redacted]  
**Sent:** Tuesday, May 01, 2018 11:45 AM  
**To:** Williams,Sylvia  
**Cc:** [redacted]  
**Subject:** RE: IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)

[redacted]

Should you have any questions, please do not hesitate to contact us.

Thanks,

[redacted]

Office of Research Services  
Room - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
604.822.5093 | [www.ors.ubc.ca](http://www.ors.ubc.ca)



a place of mind  
THE UNIVERSITY OF BRITISH COLUMBIA

Duplicate email / Courriel en double

**From:** Williams,Sylvia [mailto:Sylvia.Williams@NSERC-CRSNG.GC.CA]  
**Sent:** May 1, 2018 8:12 AM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Dear [redacted]

Thanks very much, I have reviewed the document and it is fine now.

[redacted]

**Williams, Sylvia**

**From:** Williams, Sylvia  
**Sent:** Tuesday, May 01, 2018 11:12 AM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** IP okay now - need the "start date" - the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/ [Redacted])

Dear [Redacted]

Thanks very much, I have reviewed the document and it is fine now.



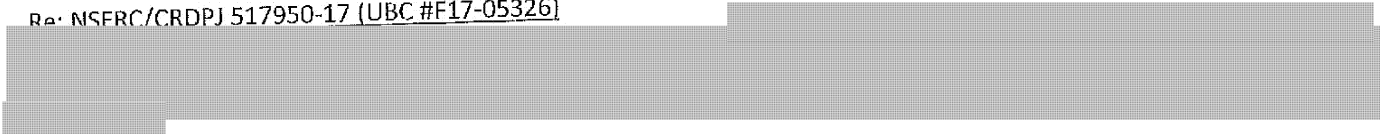
Thanks very much in advance.  
Sylvia

Duplicate email / Courriel en double

**From:** [Redacted]  
**Sent:** Friday, April 20, 2018 12:03 PM  
**To:** Williams, Sylvia  
**Cc:** [Redacted]  
**Subject:** RE: Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/ [Redacted])

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)



We look forward to receiving the final award letter from NSERC soon.

Thanks & regards,



[Redacted]  
 [Redacted] Natural & Applied Sciences  
 Office of Research Services

**Pages 424 to / à 1122  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
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**Page 425**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 530**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

February 20, 2018

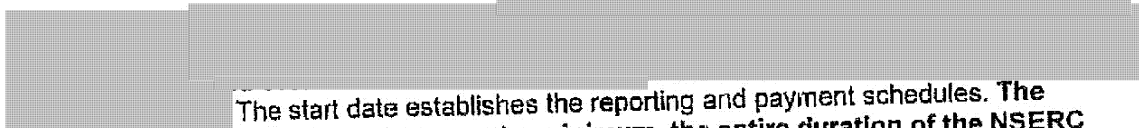
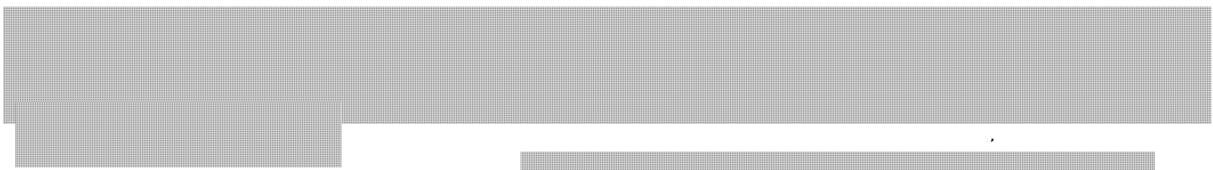
File: CRDPJ 517950 - 17

Dr. L. Lampe  
Dept. of Electrical & Comp. Engineering  
University of British Columbia  
FRED KAISER BUILDING  
2332 MAIN MALL RM 4041  
VANCOUVER BC V6T 1Z4

Dear Dr. Lampe:

Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Efficient spectrum utilization design for next-generation fixed transmission  
networks", with Huawei Technologies Co., Ltd.

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at  
the University of British Columbia.



The start date establishes the reporting and payment schedules. The  
requested IP agreement must cover, at a minimum, the entire duration of the NSERC  
project.

I enclose for your information copies of the reviews solicited on behalf of your application and the  
NSERC guidelines for External Reviewers. The identities of the authors and any third party  
reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official  
language.

The cash commitments of NSERC and the industrial sponsors to this project are summarized  
below.

	Original Amount Requested	Industrial Cash	Industrial In-kind	Amount Recommended
Year 1				\$71,800
Year 2				\$74,500
Year 3				\$16,750
TOTAL				\$163,050

Canada

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

[Redacted signature]

Sylvia Williams  
Senior Program Officer  
Research Partnerships

Telephone: (613) 996-2571  
Fax: (613) 992-5337  
E-Mail: Sylvia.Williams@nserc-crsng.gc.ca

SW/ph

Enclosure

cc: [Redacted] Research, British Columbia  
[Redacted] Huawei Technologies Co., Ltd.  
Public Relations Office, British Columbia

**Pages 866 to / à 881  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 882 to / à 883**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**  
  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

**Pages 884 to / à 890  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Williams,Sylvia**

**From:** [Redacted]  
**Sent:** Thursday, March 01, 2018 10:32 AM  
**To:** Williams,Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Sylvia,

[Redacted]

Best,

[Redacted]

**From:** Williams,Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** March 1, 2018 10:12 AM  
**To:** [Redacted]  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

Hi [Redacted]

[Redacted]

Regards,  
Sylvia

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Thursday, March 01, 2018 9:57 AM  
**To:** Williams,Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

Hi Sylvia,

[Redacted]

**From:** Williams,Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** March 1, 2018 9:55 AM  
**To:** [Redacted]



**Pages 535 to / à 543  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 544**

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est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Williams, Sylvia

**From:** Williams, Sylvia  
**Sent:** Thursday, March 01, 2018 10:12 AM  
**To:** [Redacted]  
**Subject:** RE: CRDPJ 517550-17 [Redacted]

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

Hi [Redacted]

[Redacted]

Regards,  
Sylvia

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Thursday, March 01, 2018 9:57 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

Hi Sylvia,

[Redacted]

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** March 1, 2018 9:55 AM  
**To:** [Redacted]  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

Hello [Redacted]

[Redacted]

Best Regards, Sylvia

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Tuesday, February 13, 2018 9:46 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [Redacted]

Hi Sylvia,

# IP Checklist

[Redacted] - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	[Redacted]
2. Protect IP Assets of Partners	[Redacted]
> Background IP	[Redacted]
> Review of publications for partner's confidential information	[Redacted]
3. Maximum of 6 month publication delay	[Redacted]
4. No delay of student thesis defence	[Redacted]
5. License back to institution/researchers for non-commercial purposes	[Redacted]

### Type of Access

Unrestricted dissemination	[Redacted]
Non-exclusive licensing	[Redacted]
Non-exclusive licensing with option for negotiating exclusive license	[Redacted]
Exclusive license	[Redacted]
Joint ownership	[Redacted]
Partial assignment of ownership	[Redacted]
Full assignment of ownership	[Redacted]

Update the internal tab in Namis and place original IP checklist on file

[Redacted signature area]

/s/ Ivia Williams  
Senior Program Officer

2018/02/09

Date

Williams, Sylvia

**From:** [redacted] <[redacted]>  
**Sent:** Thursday, March 01, 2018 10:23 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]  
**Attachments:** Amendment 1 (Draft)0301.doc

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Sylvia,

Best,

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca] **Duplicate email / Courriel en double**  
**Sent:** March 1, 2018 10:12 AM  
**To:** [redacted]  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Hi [redacted]

Regards,  
Sylvia

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Thursday, March 01, 2018 9:57 AM **Duplicate email / Courriel en double**  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Hi Sylvia,

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca] **Duplicate email / Courriel en double**  
**Sent:** March 1, 2018 9:55 AM

**Page 426**

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est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Williams, Sylvia

**From:** [redacted]  
**Sent:** Wednesday, April 11, 2018 4:09 PM  
**To:** Williams, Sylvia  
**Cc:** [redacted]  
**Subject:** RE: Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Sylvia,

[redacted]

Best wishes,

[redacted]

[redacted]  
 The University of British Columbia  
 University-Industry Liaison Office  
 Room [redacted]  
 6190 Agronomy Road  
 Vancouver, BC V6T 1Z3

Phone: [redacted]  
 Fax: (604) 822-8009  
 email: [redacted]  
 web: [www.uilo.ubc.ca](http://www.uilo.ubc.ca)

NOTICE: The information transmitted in this electronic mail message is intended only for the person or entity to whom it is addressed and may contain confidential and/or privileged information. Any review, copying, retransmission, dissemination or other use of, or taking any action in reliance upon this information by persons or entities other than the intended recipient is prohibited. If you received this message in error, please notify the sender immediately and delete the material from any computer. Thank you for your cooperation.

**From:** [redacted]  
**Sent:** April 5, 2018 5:55 AM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** Re: Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326/[redacted])

Hi

[redacted]

Regards,

[redacted]

On Mar 28, 2018, at 9:02 AM, [redacted] wrote:

Williams, Sylvia

**From:** Williams, Sylvia  
**Sent:** Wednesday, March 28, 2018 11:35 AM  
**To:** [REDACTED]  
**Subject:** Issues with the agreement: NSERC/RDPJ 517950-17 (UBC #F17-05326, [REDACTED])

Dear [REDACTED]

Sorry this has taken a while.

Thanks very much.  
Sylvia

Sylvia Williams,  
Senior Program Officer / Administratrice Principale de programmes  
Research Partnerships / Partenariats de recherche  
NSERC-CRSNG  
613-996-2571

The following information that NSERC has previously communicated to Huawei related to the CRD Grant Program applies in this case:

*RAs that are not compliant with what is stated below will not be accepted by NSERC, and no exceptions will be considered:*

- The Research Agreement cannot be used to turn the NSERC CRD grant into contract research as it clearly states on our website; we do not support contract research. If a Statement of Work (SOW) is to be included it must be a copy of the grant application itself or a summary thereof. SOWs that repeat sections of the grant application, but with content that is not the same as the application, will not be accepted.*
- The industrial partner's cash contributions to the NSERC funded project are expected to occur as regular payments over time and not to be outcome driven. NSERC pays its matching portion of the grant at the beginning of the grant year with the expectation that the partner will honour their entire cash and in-kind commitment for that year. Should the research not progress as anticipated, the industrial partner should first discuss any potential issues with the university in an effort to resolve them and notify NSERC if the*



situation becomes serious. At this point the industrial partner may decide to withhold payments for subsequent years or decide to terminate the grant and NSERC should be informed of this decision

- The industrial partner payments may be tied to a deliverable (for example the receipt of a progress report) provided that the deliverable is described as a milestone in the grant application and provided that the payment is not dependent on the quality, content, or acceptance by the industrial partner of that deliverable. Note that while the publication of scholarly journal articles are encouraged and expected as outcomes of the NSERC research, industry partner payments cannot be tied to the publication of such scholarly journal articles (or patents!).
- The University Principle Investigator (PI) is the lead of the NSERC funded project, not the company. The research plan, milestones, expected deliverables, and outcomes should be reached in a collaborative manner between the PI and the company, and should not be dictated by the company. There is an element of good faith in a University driven research grant that is supported by NSERC funds and as such, specific quality or content of the research outcomes cannot be enforced as you might expect them to be in contract research.

Duplicate email / Courriel en double

**From:** [redacted]  
**Sent:** Thursday, March 08, 2018 11:37 AM  
**To:** Williams, Sylvia  
**Cc:** [redacted]; [redacted]  
**Subject:** NSERC/RDPJ 517950-17 (UBC #F17-05326) [redacted]

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)

[redacted]

[redacted]

[redacted]

Thanks & regards,

[redacted]

[redacted] Natural & Applied Sciences  
 Office of Research Services  
 Room [redacted] - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
 ☎ [redacted] | ☎ 604.822.5093 | 🌐 [www.ors.ubc.ca](http://www.ors.ubc.ca)



a place of mind  
THE UNIVERSITY OF BRITISH COLUMBIA

s.13(1)(c)

s.19(1)

s.20(1)(b)

Holloway, Pascale

s.20(1)(c)

**From:** Williams, Sylvia  
**Sent:** Thursday, March 08, 2018 11:57 AM  
**To:** Holloway, Pascale  
**Subject:** FW: NSERC/RDPJ 517950-17 (UBC #F17-05326/Lampe)  
**Attachments:** NSERC\_CRDPJ\_Huawei\_Approval.pdf; CRA-PPA7051CAN1711090023798590299515-UBC [REDACTED] FE- Nov 17, 2017....pdf

New IP agreement. Will need the checklist. Thanks.

Duplicate email / Courriel en double

**From:** [REDACTED]  
**Sent:** Thursday, March 08, 2018 11:37 AM  
**To:** Williams, Sylvia [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** NSERC/RDPJ 517950-17 (UBC #F17-05326/ [REDACTED])

Dear Sylvia,

Re: NSERC/CRDPJ 517950-17 (UBC #F17-05326)

We look forward to receiving the final award letter from NSERC soon.

Thanks & regards,

[REDACTED]

[REDACTED]  
Natural & Applied Sciences  
Office of Research Services  
Room [REDACTED] - 6190 Agronomy Road, Vancouver BC V6T 1Z3  
[REDACTED] | 604.822.5093 | [www.ors.ubc.ca](http://www.ors.ubc.ca)



**a place of mind**  
THE UNIVERSITY OF BRITISH COLUMBIA

To: [redacted]  
Subject: RE: CRDPJ 517550-17 - [redacted]

Hello [redacted]

Best Regards, Sylvia

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Tuesday, February 13, 2018 9:46 AM  
**To:** Williams,Sylvia  
**Subject:** RE: CRDPJ 517550-17 [redacted]

Hi Sylvia,

Best,

**From:** Williams,Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** February 9, 2018 1:42 PM  
**To:** [redacted]  
**Subject:** RE: CRDPJ 517550-17 [redacted]

Dear [redacted]

**Pages 545 to / à 549  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Williams, Sylvia**

**From:** [redacted] <[redacted]>  
**Sent:** Thursday, March 01, 2018 9:57 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Sylvia,

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** March 1, 2018 9:55 AM  
**To:** [redacted] >  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Hello [redacted]

Best Regards, Sylvia

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Tuesday, February 13, 2018 9:46 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Hi Sylvia,

Best,

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** February 9, 2018 1:42 PM  
**To:** [redacted] <[redacted]>  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Dear [redacted]

To: [redacted]  
Subject: RE: CRDPJ 517550-17

Hello [redacted]

Best Regards, Sylvia

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Tuesday, February 13, 2018 9:46 AM  
**To:** Williams,Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Hi Sylvia,

Best,

---

**From:** Williams,Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** February 9, 2018 1:42 PM  
**To:** [redacted]  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Dear [redacted]



Thanks very much.  
Sylvia

Sylvia Williams,  
*Senior Program Officer / Administratrice Principale de programmes*  
*Research Partnerships / Partenariats de recherche*  
NSERC-CRSNG  
613-996-2571

*Please feel free to reply in the official language of your choice/ N'hésitez pas à me répondre dans la langue officielle de votre choix*

---

**From:** [redacted] [mailto:[redacted]]

**Sent:** Wednesday, February 07, 2018 10:41 AM

**To:** Williams Sylvia

Williams, Sylvia

**From:** [redacted]  
**Sent:** Monday, March 12, 2018 10:16 AM  
**To:** Williams, Sylvia  
**Cc:** [redacted]  
**Subject:** RE: CRDPJ 517550-17 - [redacted]  
**Attachments:** Amendment FE.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Good morning Sylvia,  
[redacted]

Best,  
[redacted]

**From:** Williams, Sylvia <Sylvia.Williams@nserc-crsng.gc.ca>  
**Sent:** March 1, 2018 10:41 AM  
**To:** [redacted]  
**Subject:** RE: CRDPJ 517550-17 [redacted]

No problem.  
[redacted]

Regards,  
Sylvia

**From:** [redacted] [mailto:[redacted]] **Duplicate email / Courriel en double**  
**Sent:** Thursday, March 01, 2018 10:32 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 [redacted]

Hi Sylvia,  
[redacted]

Best,  
[redacted]

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca] **Duplicate email / Courriel en double**  
**Sent:** March 1, 2018 10:12 AM



s.13(1)(c)

s.19(1)

**Cc:** [REDACTED]  
**Subject:** CRDPJ 517550-17

Hi Sylvia

Hi Sylvia,

Best,

[REDACTED]  
[REDACTED]  
McMaster Industry Liaison Office  
McMaster Innovation Park  
175 Longwood Road South  
Hamilton, ON L8P 0A1  
phone: 905.525.9140 ext. [REDACTED]  
email: [REDACTED]

---

BRIGHTER WORLD



McMaster University recognizes and acknowledges that it is located on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the "Dish With One Spoon" wampum agreement.

**Page 458**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Natural Sciences and Engineering Research Council  
RECOMMENDATION FOR EXECUTIVE APPROVAL

Collaborative Research and Development Grants - Project (CRDPJ)  
New Proposal

Title: Efficient Spectrum Utilization Design for Next-Generation Fixed Transmission Networks

Applicant: Dr. Lutz Lampe, Electrical and Computer Engineering, UBC  
PIN: [REDACTED]

With: Huawei Technologies Canada

Application: CRDPJ 517950 - 17

Overview of the Proposal

This is a 3-year CRD application requesting [REDACTED] from NSERC. The industry partner, Huawei Technologies Canada, is contributing [REDACTED] in cash and [REDACTED] of in-kind (eligible).

Huawei Technologies Canada (Ottawa, Ontario) was incorporated in Canada in 2008, and is a subsidiary of Huawei Technologies (a multinational based in China). The letter from the sponsor indicated that Huawei has more than 700 Canadian employees and has a research centre in Ottawa (the CRC). The company indicate the [REDACTED]

[REDACTED]

Reviewers	
#	Name, Title, affiliation, expertise
R1	[REDACTED]
R2	[REDACTED]

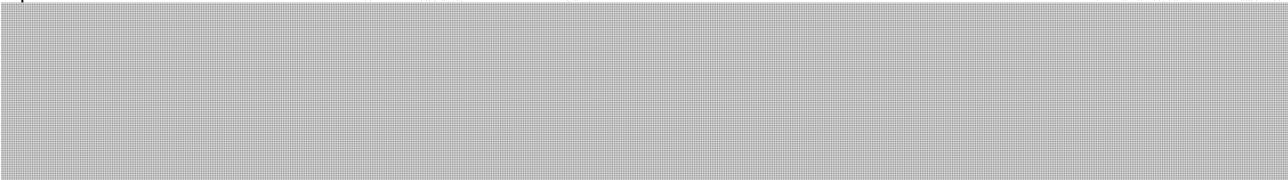
Environmental Assessment	<input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Submitted to Secretariat Date: _____	<input type="checkbox"/> Cleared Date: _____
IP Agreement	<input type="checkbox"/> Not applicable (open dissemination)	<input checked="" type="checkbox"/> Required	<input type="checkbox"/> In place & meets guidelines

9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN)	Family name of applicant
Valid [REDACTED]	Lampe

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



[Empty area for intellectual property discussion]

Dear [redacted]

I have signed your conditional offer today. The hard copy letter will come to you via Canada Post; the condition is as follows:

[redacted]

[redacted] The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement."

I recommend that you coordinate with your [redacted] and your [redacted] when you communicate your agreement in place and a preferred start date.

Best regards,  
Sylvia

Sylvia Williams,  
Senior Program Officer / Administratrice Principale de programmes  
Research Partnerships / Partenariats de recherche  
NSERC-CRSNG  
613-996-2571

Please feel free to reply in the official language of your choice/ N'hésitez pas à me répondre dans la langue officielle de votre choix

Duplicate email / Courriel en double

From: [redacted] [mailto:[redacted]]  
Sent: Thursday, June 14, 2018 12:18 PM  
To: Williams, Sylvia  
Cc: [redacted]  
Subject: Re: Your CRD application 522368-2017 [redacted]

Dear Sylvia,

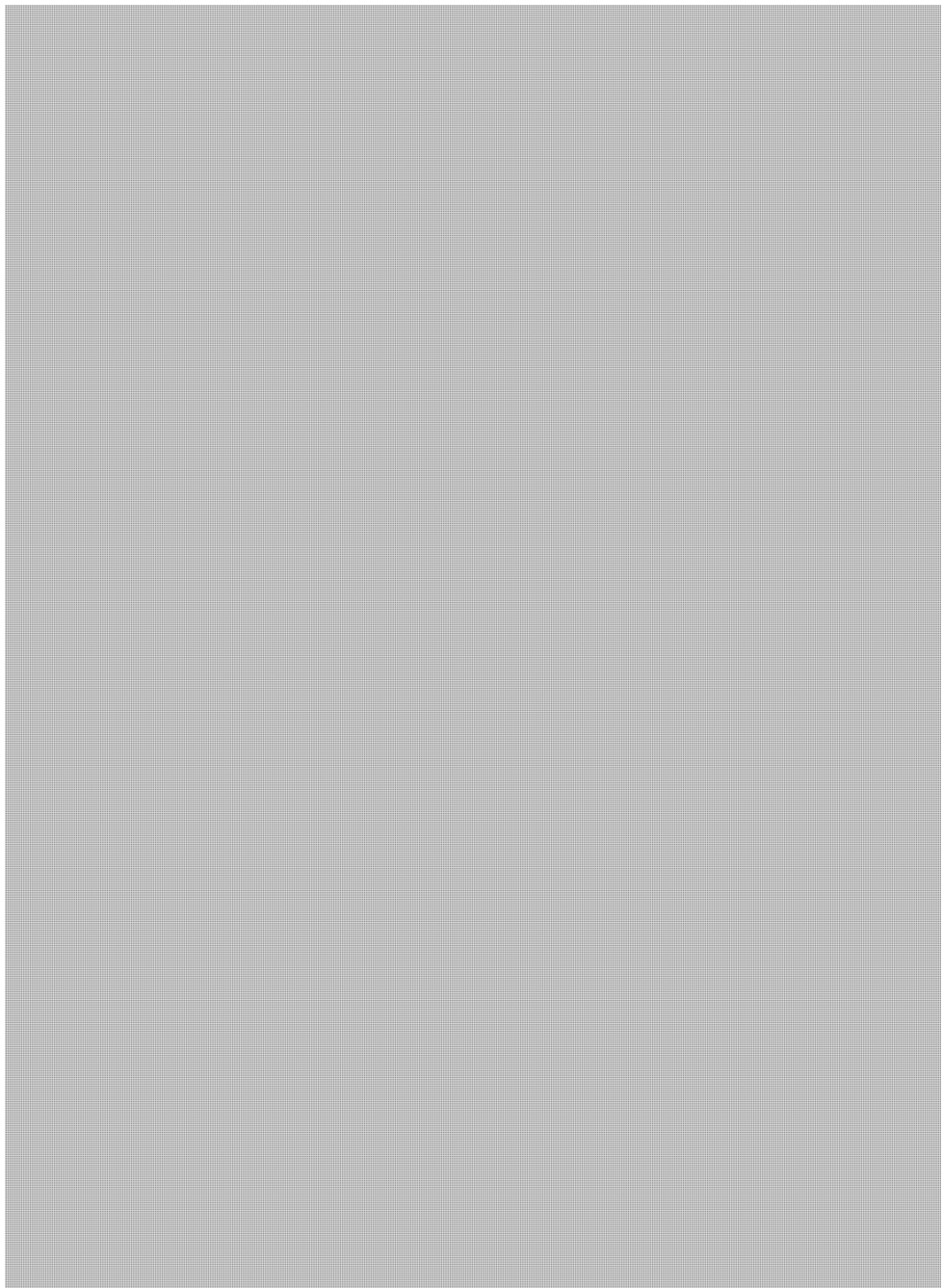
[redacted]

Cheers,

Sylvia Williams

**From:** [REDACTED]  
**Sent:** Wednesday, April 18, 2018 2:11 PM  
**To:** Williams,Sylvia  
**Cc:** [REDACTED]; [REDACTED]  
**Subject:** Re: Your CRD application 522368-2017 - request for clarification on "Partner Eligibility"

Dear Sylvia,

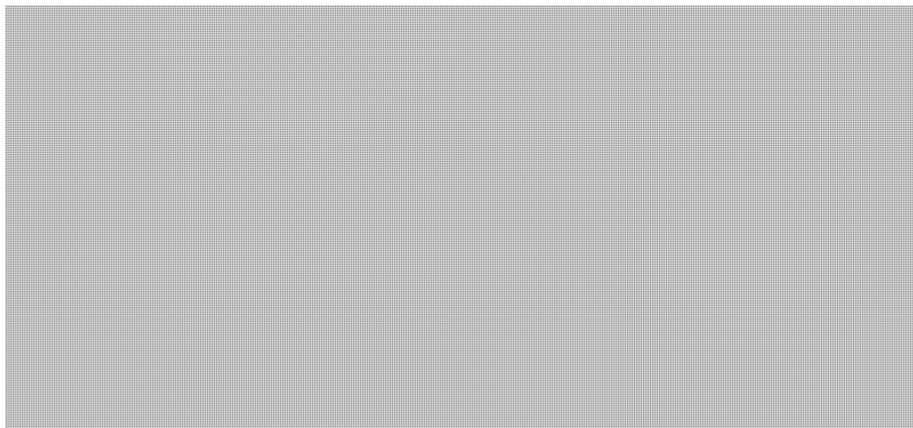


s.19(1)

s.20(1)(b)

s.20(1)(c)

s.21(1)(b)



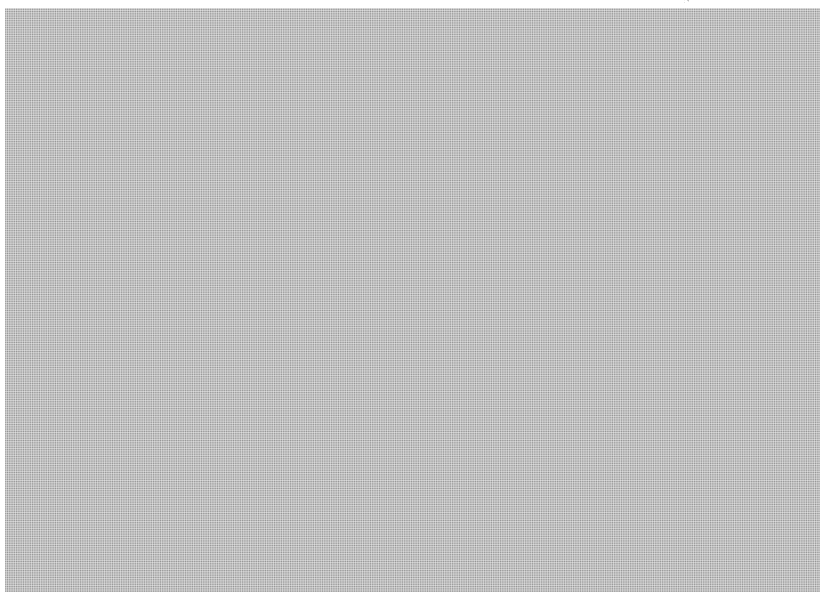
Many thanks!

Cheers,



On 4/10/2018 12:01 PM, Williams, Sylvia wrote:

Dear



**Pages 672 to / à 673**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c), 21(1)(b)**  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

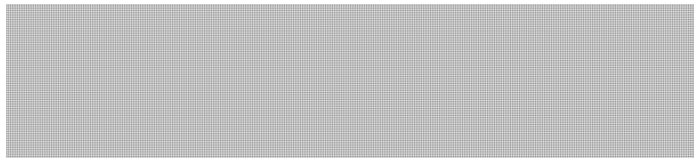


**Page 674**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**From:** [redacted] [mailto:[redacted]]  
**Sent:** Tuesday, April 10, 2018 11:02 AM  
**To:** Williams, Sylvia  
**Cc:** [redacted]  
**Subject:** Re: Your CRD application 522368-2017 - request for clarification on "Partner Eligibility"

Dear Sylvia,



Cheers,

Hoi-Kwong

On 4/5/2018 1:31 PM, Hoi-Kwong Lo wrote:

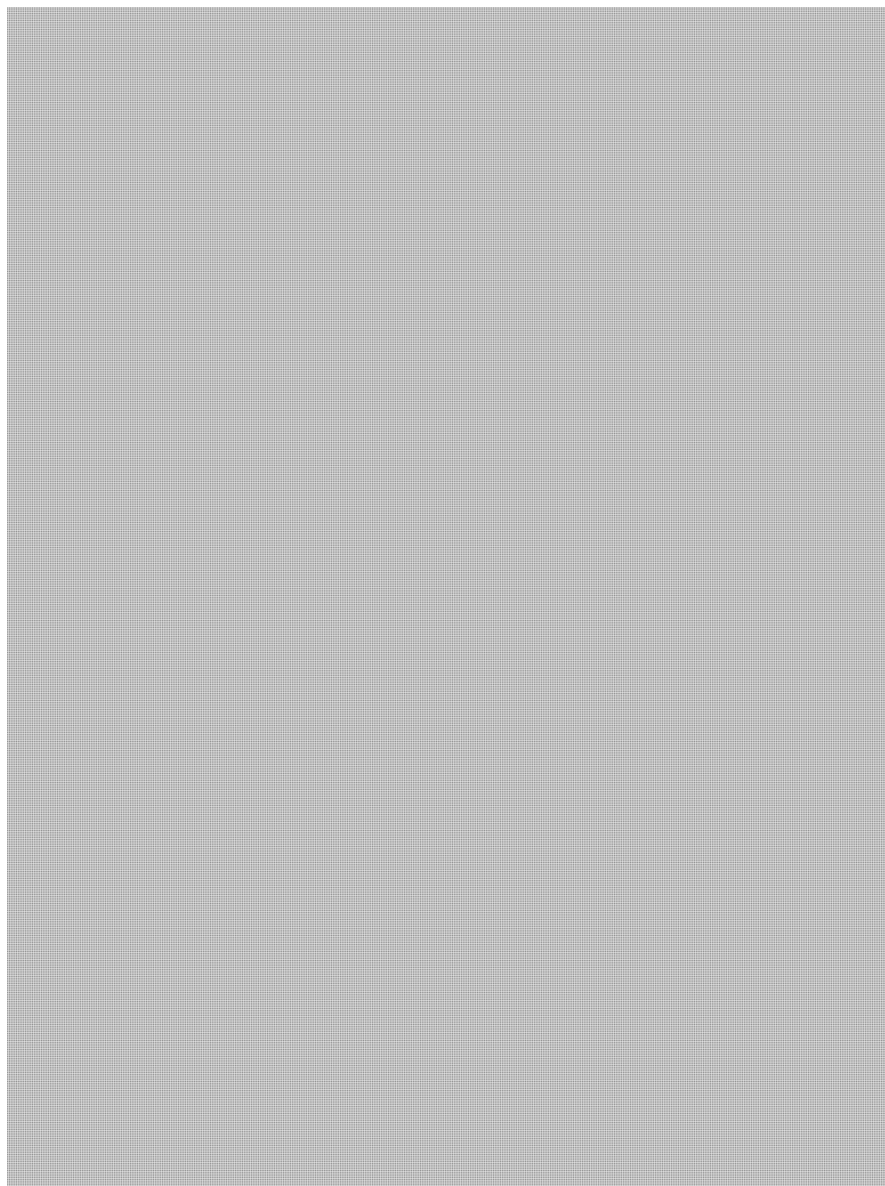
Sylvia Williams

**From:** [redacted] [mailto:\[redacted\]](#)  
**Sent:** Wednesday, April 18, 2018 2:11 PM  
**To:** Williams,Sylvia  
**Cc:** [redacted]  
**Subject:** Re: your CRD application 522368-2017 - [redacted]

Dear Sylvia,

Thanks very much for your helpful email.

Very much appreciated!



[Redacted]

On 6/1/2018 8:16 PM, Williams,Sylvia wrote:

Dear [Redacted]

[Redacted]

Regards, Sylvia

Duplicate email / Courriel en double

**From:** [Redacted]  
**Sent:** Friday, June 01, 2018 5:07 PM  
**To:** Williams,Sylvia  
**Cc:** [Redacted]  
**Subject:** Re: Your CRD application 522368-2017 - [Redacted]

Dear Sylvia,

[Redacted]

Cheers,

[Redacted]

On 4/18/2018 2:20 PM, Williams,Sylvia wrote:

Duplicate email / Courriel en double

Dear [Redacted]

[Redacted]

Regards,

**Williams, Sylvia**

---

**From:** Williams, Sylvia  
**Sent:** Thursday, July 12, 2018 10:16 AM  
**To:** 'Hoi-Kwong Lo'  
**Cc:** innovations.partnerships@utoronto.ca; [REDACTED]  
**Subject:** RE: Your CRD application 522368-2017 - [REDACTED]

Dear [REDACTED]

I have signed your conditional offer today. The hard copy letter will come to you via Canada Post; the condition is as follows:

[REDACTED]

[REDACTED] The start date establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement."

*I recommend that you coordinate with your [REDACTED] and your [REDACTED] when you communicate your agreement in place and a preferred start date.*

*Best regards,  
Sylvia*

Sylvia Williams,  
Senior Program Officer / Administratrice Principale de programmes  
Research Partnerships / Partenariats de recherche  
NSERC-CRSNG  
613-996-2571

*Please feel free to reply in the official language of your choice/ N'hésitez pas à me répondre dans la langue officielle de votre choix*

---

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** Thursday, June 14, 2018 12:18 PM  
**To:** Williams, Sylvia  
**Cc:** [REDACTED]  
**Subject:** Re: Your CRD application 522368-2017 [REDACTED]

Dear Sylvia,



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

July 12, 2018

File: CRDPJ 522368 - 17

Dr. H.K. Lo  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Lo:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Study of hardware vulnerability in continuous variable quantum  
communication", with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Toronto.

[Redacted]

[Redacted] The start date  
[Redacted] establishes the reporting and payment schedules.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the NSERC guidelines for External Reviewers. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the partner(s) to this project are summarized below.

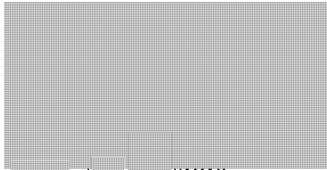
	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1	[Redacted]	[Redacted]	[Redacted]	\$72,500
Year 2	[Redacted]	[Redacted]	[Redacted]	\$72,500
Year 3	[Redacted]	[Redacted]	[Redacted]	\$72,500
TOTAL	[Redacted]	[Redacted]	[Redacted]	\$217,500

Canada

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,



Sylvia Williams  
Program officer  
Research Partnerships

Telephone: (613) 996-2571  
Fax: (613) 992-5337  
E-Mail: Sylvia.Williams@nserc-crsng.gc.ca

SW/ph

Enclosure

cc: L. Qian, Electrical & Computer Engineering, Toronto, Toronto  
A.D. Quinn, Research, Toronto  
Huawei Technologies Co., Ltd.

Many thanks in advance!

Duplicate email / Courriel en double

Cheers,

[Redacted]

On 4/5/2018 1:31 PM, [Redacted] wrote: Duplicate email / Courriel en double

Dear Sylvia,

[Redacted]

Cheers,

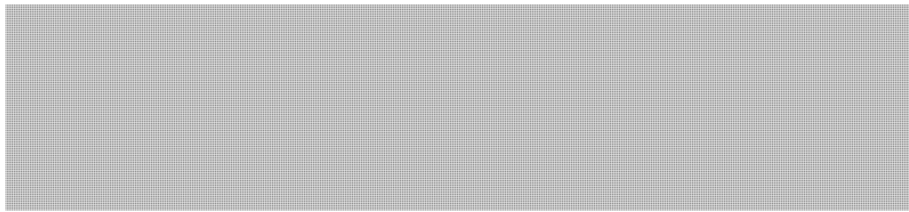
[Redacted]

On 4/3/2018 7:09 AM, Williams, Sylvia wrote:

Dear [Redacted] and will take a look tomorrow  
at your proposal once more.

[Redacted]

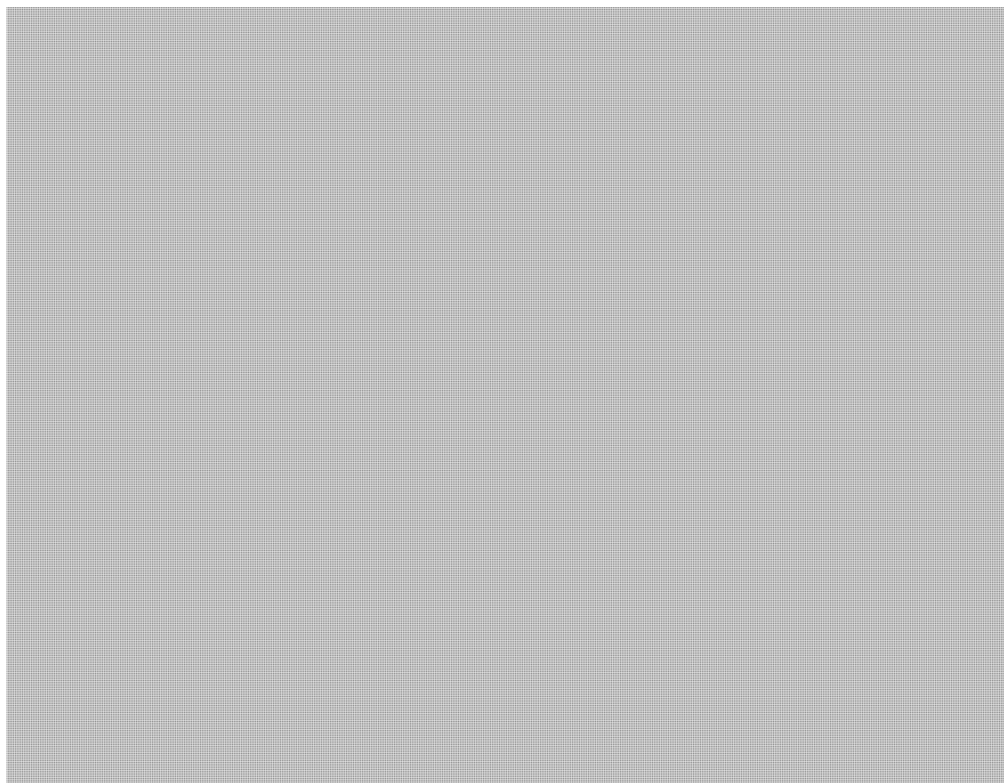


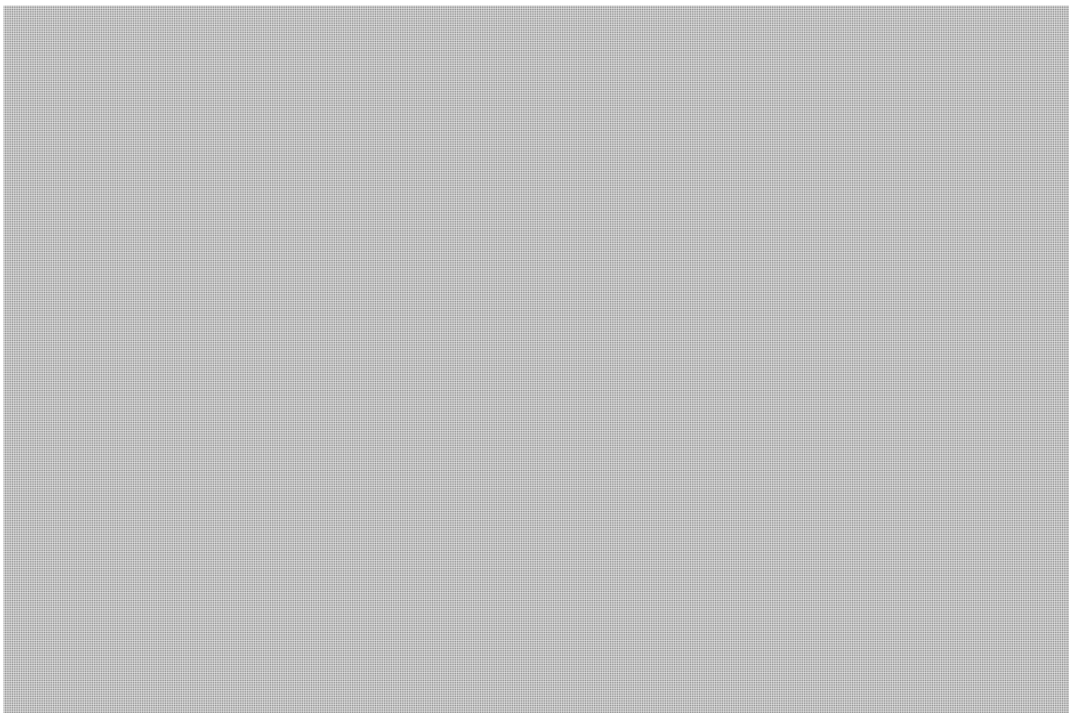


- Sylvia

**From** [redacted]  
**Sent:** Monday, April 02, 2018 9:06 PM  
**To:** Williams.Sylvia  
**Cc** [redacted]  
**Subject:** Re: Your CRD application 522368-2017 - [redacted]

Dear Sylvia,

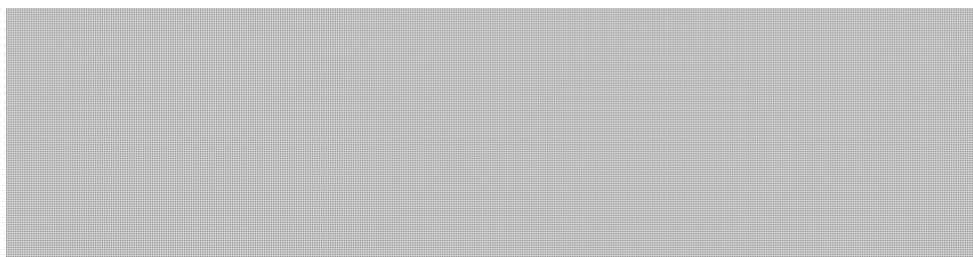


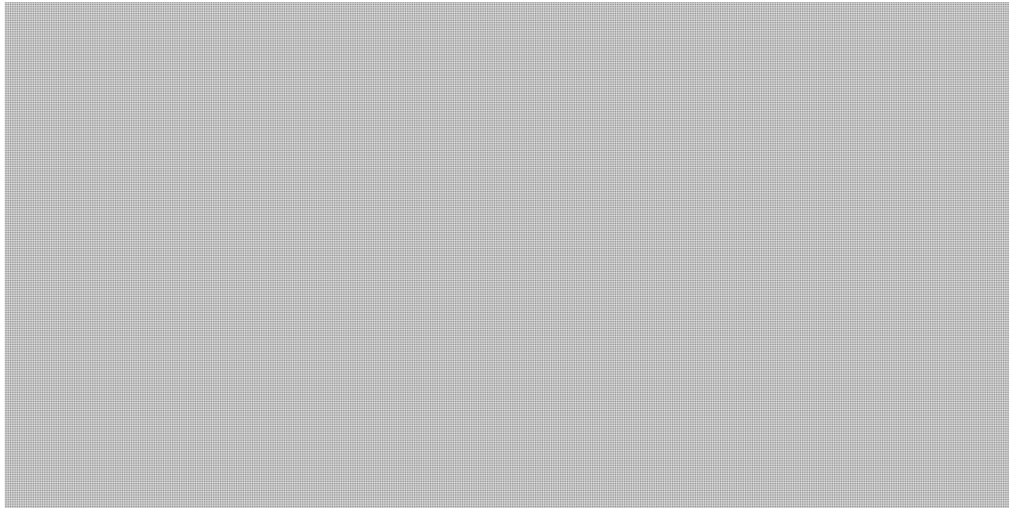


Cheers,



Hi



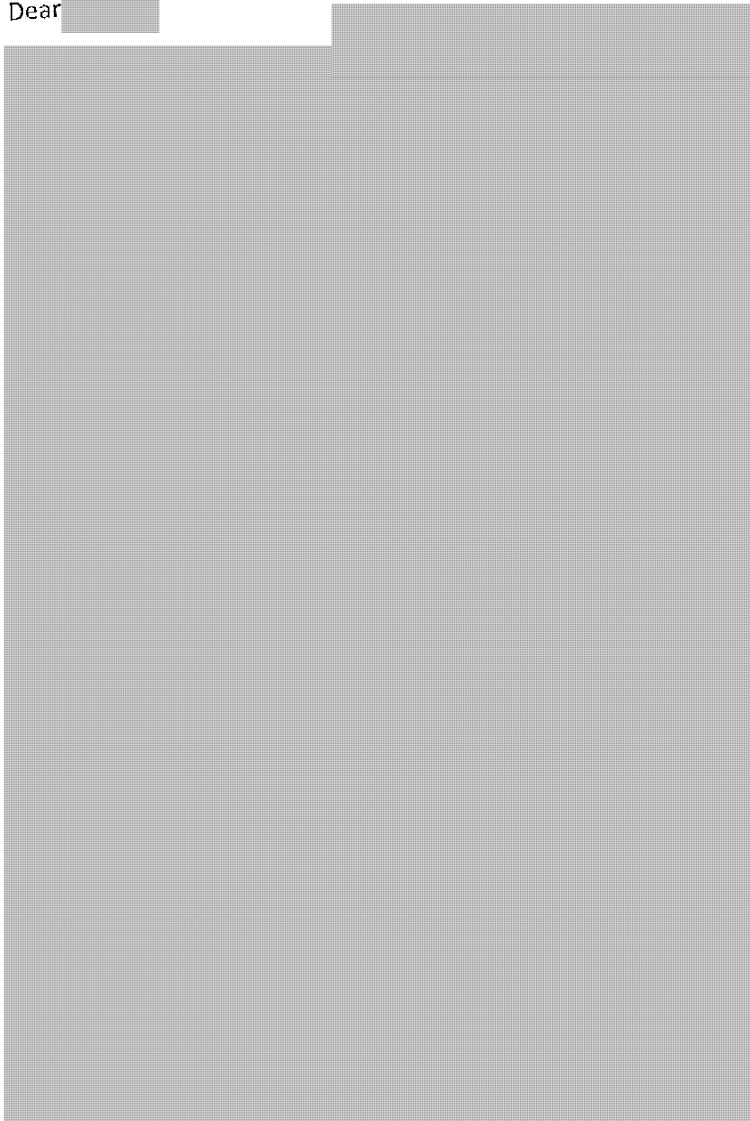


Regards.



On 3/13/2018 12:29 PM, Williams, Sylvia wrote:

Dear [redacted]

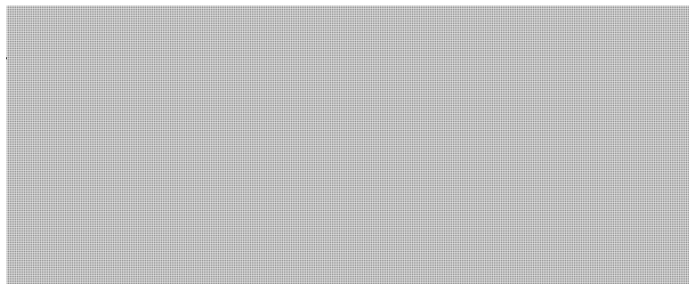


**Page 704**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(d)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



Thanks very much in advance,  
Sylvia

Sylvia Williams,  
*Senior Program Officer / Administratrice Principale de  
programmes  
Research Partnerships / Partenariats de recherche  
NSERC-CRSNG  
613-996-2571*

*Please feel free to reply in the official language of your choice/  
N'hésitez pas à me répondre dans la langue officielle de votre choix*

s.13(1)(c)

s.19(1)

s.20(1)(b)

s.20(1)(c)

[Redacted]  
PIN: [Redacted]

**Benefits to Canada:**

[Redacted]

**Page 0**

**is withheld pursuant to sections  
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**of the Access to Information Act  
de la Loi sur l'accès à l'information**

9 (SNG, CRD, IZI, IRC, DND)

Personal identification no. (PIN)	Family name of applicant
Valid [REDACTED]	Lo

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Empty text area for intellectual property discussion.





Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)

s.20(1)(b)


s.20(1)(c)

## Terms and Conditions of Award Grant Summary

**File:** CRDPJ 508309 - 16

**Project Title:** Development of flexible silicon photonic components for WDM optical networks

**Grantee:** V. Van, Electrical and Computer Engineering, Alberta

**Industry Partners:**  Huawei Technologies Canada

**Co-grantees:** M. Hossain, Electrical and Computer Engineering, Alberta

**Project Start Date:** 2017/07/01      **Project End Date:** 2020/06/30

**Report Due Dates:**

Status Report	2018/04/01
Progress Report	2019/04/01
Final Report	2020/08/30

**\*Status report** –Please note that this is not a progress report, but an opportunity to report any issues with project or partners.

### Amount of Award:

1/3	\$115,000	2017/07/01
2/3	\$115,000	2018/07/01
3/3	\$115,000	2019/07/01

### Industrial Contribution:

<u>CASH</u>	<u>IN KIND</u>
-------------	----------------



Christian Chouinard  
Manager  
Research Partnerships  
[crsng.gc.ca](http://crsng.gc.ca)

Telephone: (613) 995-8124  
Fax: (613) 992-5337  
E-mail: [Christian.Chouinard@nserc-](mailto:Christian.Chouinard@nserc-)



## TERMS AND CONDITIONS OF AWARD

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3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
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7. If you are or have been (at any time during the past 12 months) a federal public servant, you have complied with and will continue to respect the Values and Ethics Code for the Public Sector.
8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
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- confirmation of continued financial support by the industry partner(s) for the following term;
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NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

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You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the  Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

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**Turcotte, Lyne**

**From:** [Redacted] <[Redacted]>  
**Sent:** Tuesday, July 04, 2017 2:45 PM  
**To:** Chouinard, Christian  
**Cc:** Turcotte, Lyne  
**Subject:** Re: NSERC CRD Grant proposal Development of flexible silicon photonic components for WDM optical networks with Dr. Van

Dear Christian,

Thank you for your email. [Redacted]

Best regards,

[Redacted]

Professor  
 Department of Electrical and Computer Engineering  
 University of Alberta  
 Edmonton, AB  
 T6G 2V4, Canada  
 Tel. [Redacted]  
 Web: [Redacted]

On Tue, Jul 4, 2017 at 11:46 AM, Chouinard, Christian <[Christian.Chouinard@nserc-crsng.gc.ca](mailto:Christian.Chouinard@nserc-crsng.gc.ca)> wrote:

Dear [Redacted]

I have just received approval for my recommendation to management to fund your CRD. Since the research agreement already covers all the mandatory requirements and the terms covers the entire period of the CRD, all I need from you is a [Redacted] This date will set all the reporting requirements for the grant.

Should you have any questions or concerns, please do not hesitate to contact me.

Best regards,

Christian

**Christian Chouinard, PhD**

**Manager | Gestionnaire**

- The industrial partner's cash contributions to the NSERC funded project are expected to occur as regular payments over time and not to be outcome driven. NSERC pays its matching portion of the grant at the beginning of the grant year with the expectation that the partner will honour their entire cash and in-kind commitment for that year. Should the research not progress as anticipated, the industrial partner should first discuss any potential issues with the university in an effort to resolve them and notify NSERC if the situation becomes serious. At this point the industrial partner may decide to withhold payments for subsequent years or decide to terminate the grant and NSERC should be informed of this decision.
- The industrial partner payments may be tied to a deliverable (for example the receipt of a progress report) provided that the deliverable is described as a milestone in the grant application and provided that the payment is not dependent on the quality, content, or acceptance by the industrial partner of that deliverable. Note that while the publication of scholarly journal articles are encouraged and expected as outcomes of the NSERC research, industry partner payments cannot be tied to the publication of such scholarly journal articles (or patents!).
- The University Principle Investigator (PI) is the lead of the NSERC funded project, not the company. The research plan, milestones, expected deliverables, and outcomes should be reached in a collaborative manner between the PI and the company, and should not be dictated by the company. There is an element of good faith in a University driven research grant that is supported by NSERC funds and as such, specific quality or content of the research outcomes cannot be enforced as you might expect them to be in contract research. [REDACTED]

Please let me know how you plan to go forward.

Thanks very much.  
Sylvia

Sylvia Williams,  
Senior Program Officer / Administratrice Principale de programmes  
Research Partnerships / Partenariats de recherche  
NSERC-CRSNG  
613-996-2571

*Please feel free to reply in the official language of your choice/ N'hésitez pas à me répondre dans la langue officielle de votre choix*

---

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** Wednesday, February 07, 2018 10:41 AM  
**To:** Williams.Sylvia  
**Cc:** [REDACTED]  
**Subject:** CRDPJ 517550-17

Hi Sylvia,  
[REDACTED]

Best,  
[REDACTED]

McMaster Industry Liaison Office

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
[christian.chouinard@nserc-crsng.gc.ca](mailto:christian.chouinard@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | [613-995-8124](tel:613-995-8124)

Facsimile | Télécopieur | [613-992-5337](tel:613-992-5337)

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** Turcotte, Lyne  
**Sent:** April-05-17 3:03 PM  
**To:** [REDACTED]  
**Cc:** Chouinard, Christian; [REDACTED]  
**Subject:** NSERC CRD Grant proposal Development of flexible silicon photonic components for WDM optical networks with Dr. Van

Good afternoon [REDACTED]

We recently received your grant proposal for a Collaborative Research and Development Grant. Please find attached to this email NSERC's official letter providing you with more information. Mr. Christian Chouinard will be the manager working on your proposal. Should he have any questions he will contact you shortly. We thank you for your submission and wish you great success in all your endeavours.

Sincerely,

**Lyne Turcotte**



**Turcotte, Lyne**

---

**From:** Chouinard, Christian  
**Sent:** Tuesday, July 04, 2017 1:46 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: NSERC CRD Grant proposal Development of flexible silicon photonic components for WDM optical networks with Dr. Van

Dear [REDACTED]

I have just received approval for my recommendation to management to fund your CRD. Since the research agreement already covers all the mandatory requirements and the terms covers the entire period of the CRD, [REDACTED] Please note that this date can't be prior to June 30, 2017. This date will set all the reporting requirements for the grant.

Should you have any questions or concerns, please do not hesitate to contact me.

Best regards,  
Christian

**Christian Chouinard, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

---  
[christian.chouinard@nserc-crsng.gc.ca](mailto:christian.chouinard@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-995-8124  
Facsimile | Télécopieur | 613-992-5337  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** Turcotte, Lyne **Duplicate email / Courriel en double**  
**Sent:** April-05-17 3:03 PM  
**To:** [REDACTED]  
**Cc:** Chouinard, Christian; [REDACTED]  
**Subject:** NSERC CRD Grant proposal Development of flexible silicon photonic components for WDM optical networks with Dr. Van

Good afternoon [REDACTED]

We recently received your grant proposal for a Collaborative Research and Development Grant. Please find attached to this email NSERC's official letter providing you with more information. Mr. Christian Chouinard will be the manager working on your proposal. Should he have any questions he will contact you shortly. We thank you for your submission and wish you great success in all your endeavours.

Sincerely,

## IP Checklist

V. Van 508309 - 16

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
➤ Background IP	
➤ Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file

Christian Chouinard  
Manager

*Jan 31<sup>st</sup> 2017*  
Date

Natural Sciences and Engineering Research Council

RECOMMENDATION FOR EXECUTIVE APPROVAL

Collaborative Research and Development Grants - Project (CRDPJ)

New Proposal

**Title:** Development of flexible silicon photonic components for WDM optical networks

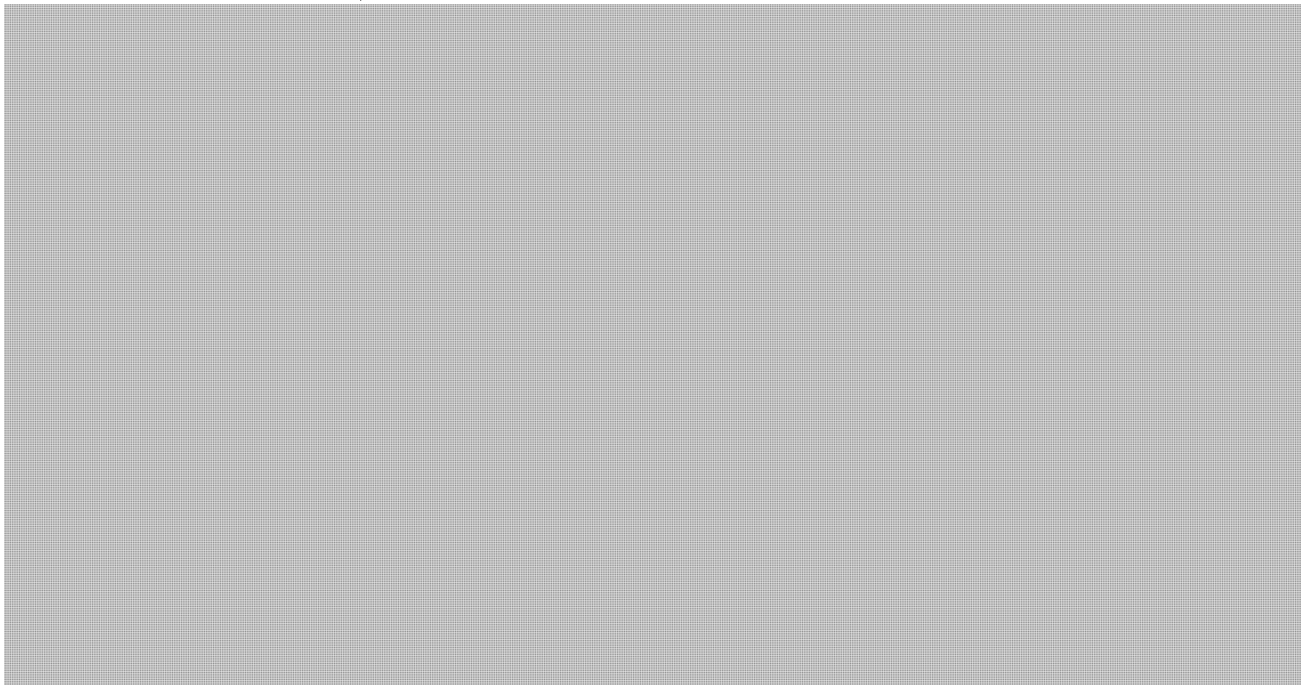
**Applicant:** Dr. Vien Van, Department of Electrical and Computer Engineering, University of Alberta  
**PIN:** [REDACTED]

**Co-applicant:** Hossain, Massum, Department of Electrical and Computer Engineering, University of Alberta  
**PIN:** [REDACTED]

**With:** Huawei Technologies Canada

**Application:** CRDPJ 508309 - 16

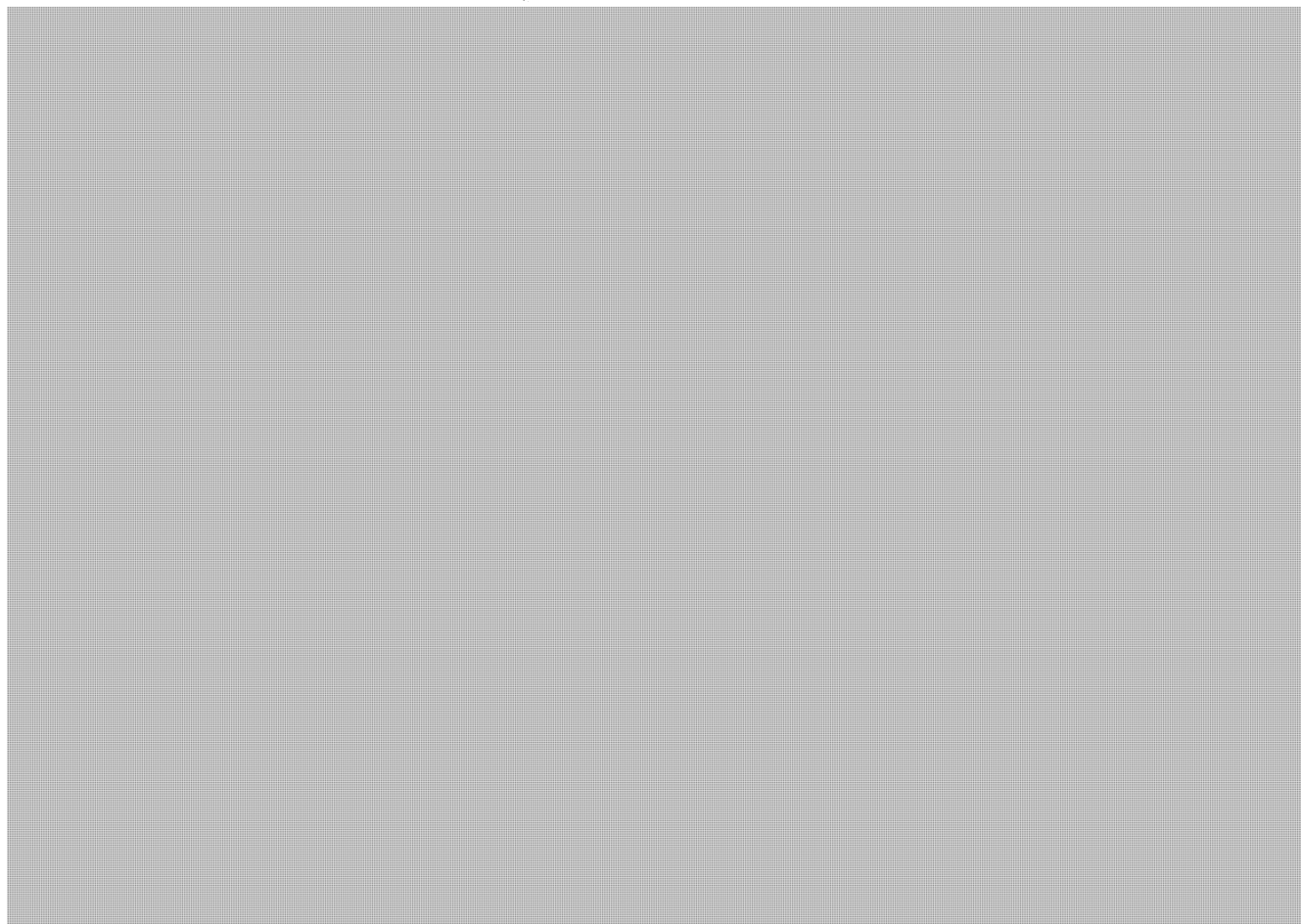
Overview of the Proposal

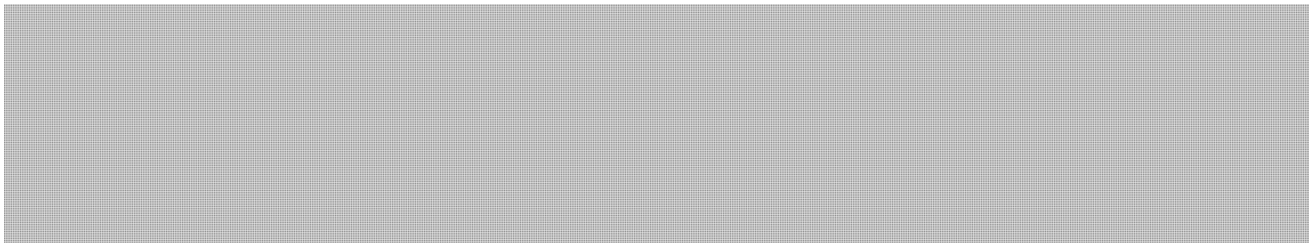


Reviewers	
#	Name, Title, affiliation, expertise
1	
2	
3	
4	
5	

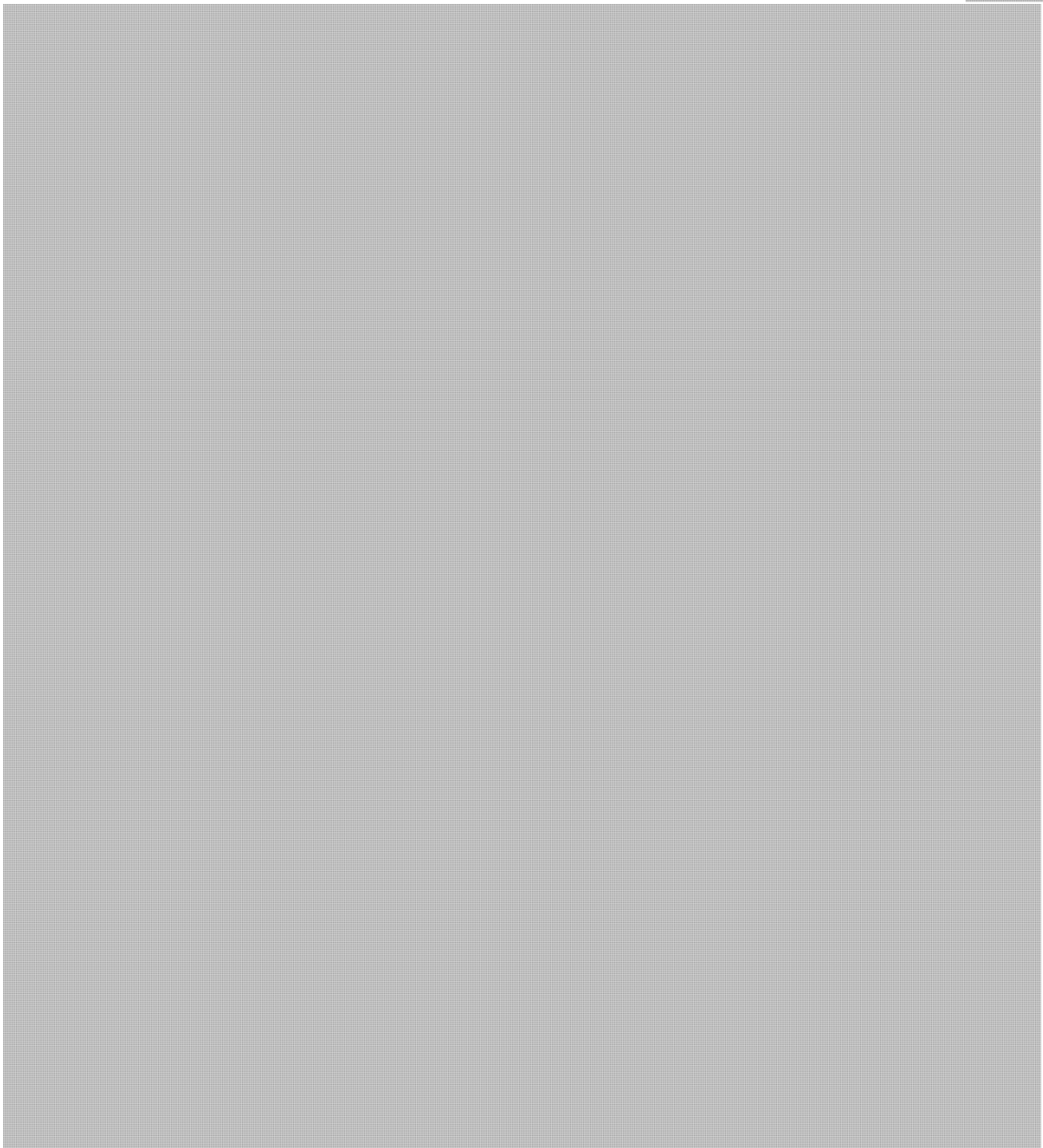
Environmental Assessment	<input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Submitted to Secretariat Date: _____	<input type="checkbox"/> Cleared Date: _____
IP Agreement	<input type="checkbox"/> Not applicable (open dissemination)	<input type="checkbox"/> Required	<input checked="" type="checkbox"/> In place
Comments: The IP agreement requires an amendment to cover duration of the grant.			

<b>Competence of the research team</b>	Meets
	Does not meet





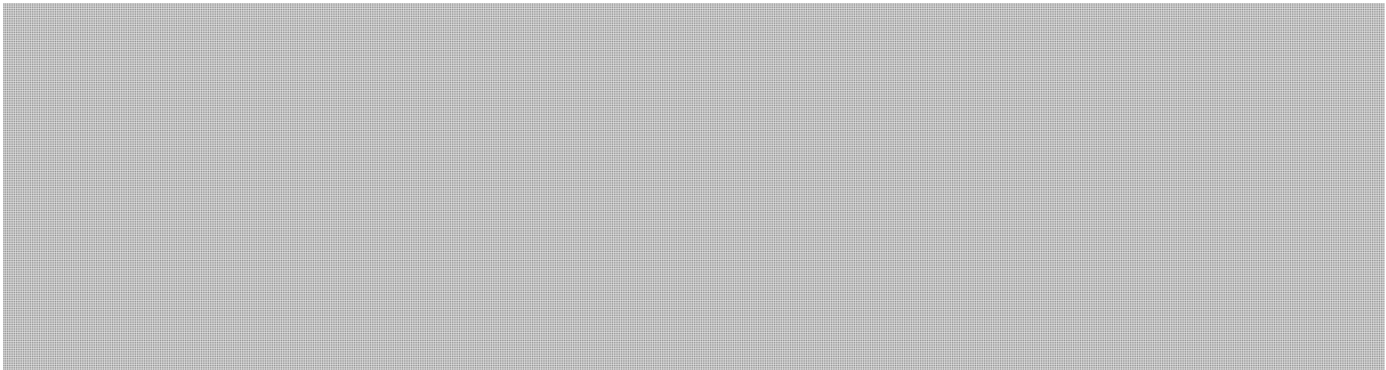
<b>Scientific Merit and Technical Feasibility</b>	Meets
	Does not meet

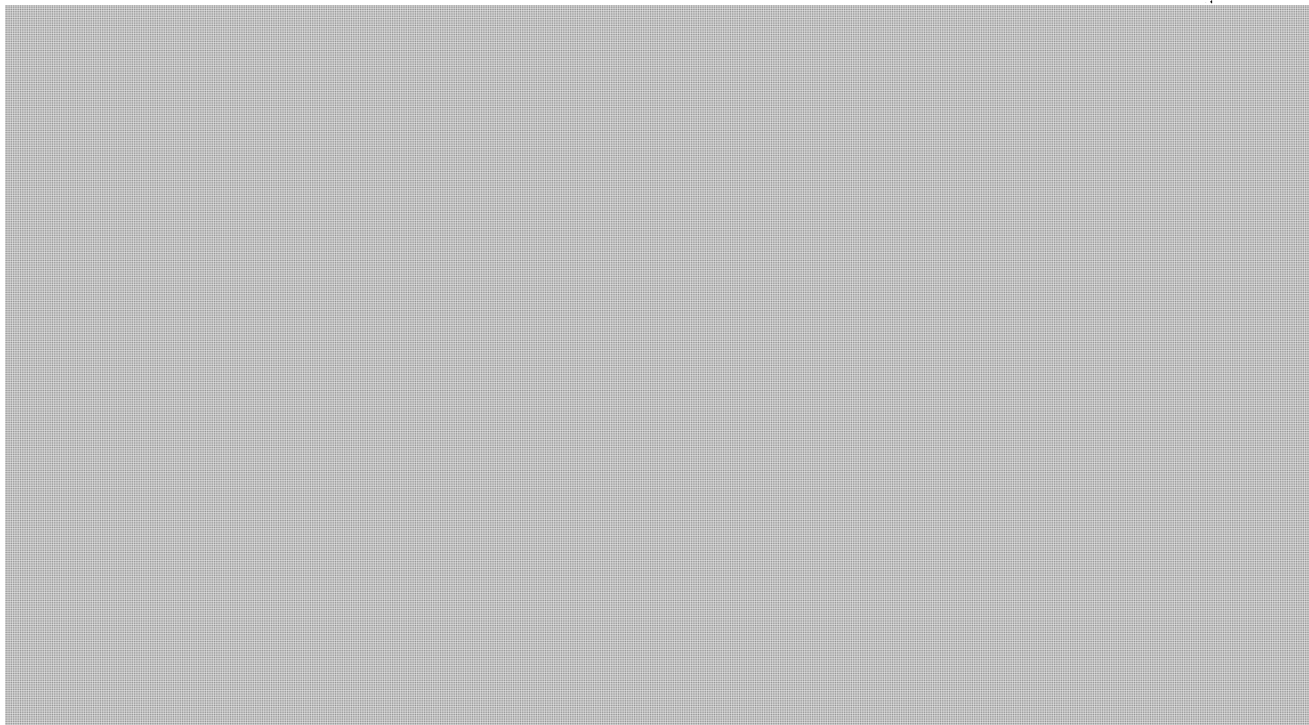


<b>Training Opportunities</b>				Meets	
				Does not meet	
<b>Undergrads</b>		<b>MSc.</b>		<b>PhD</b>	<b>PDF</b>

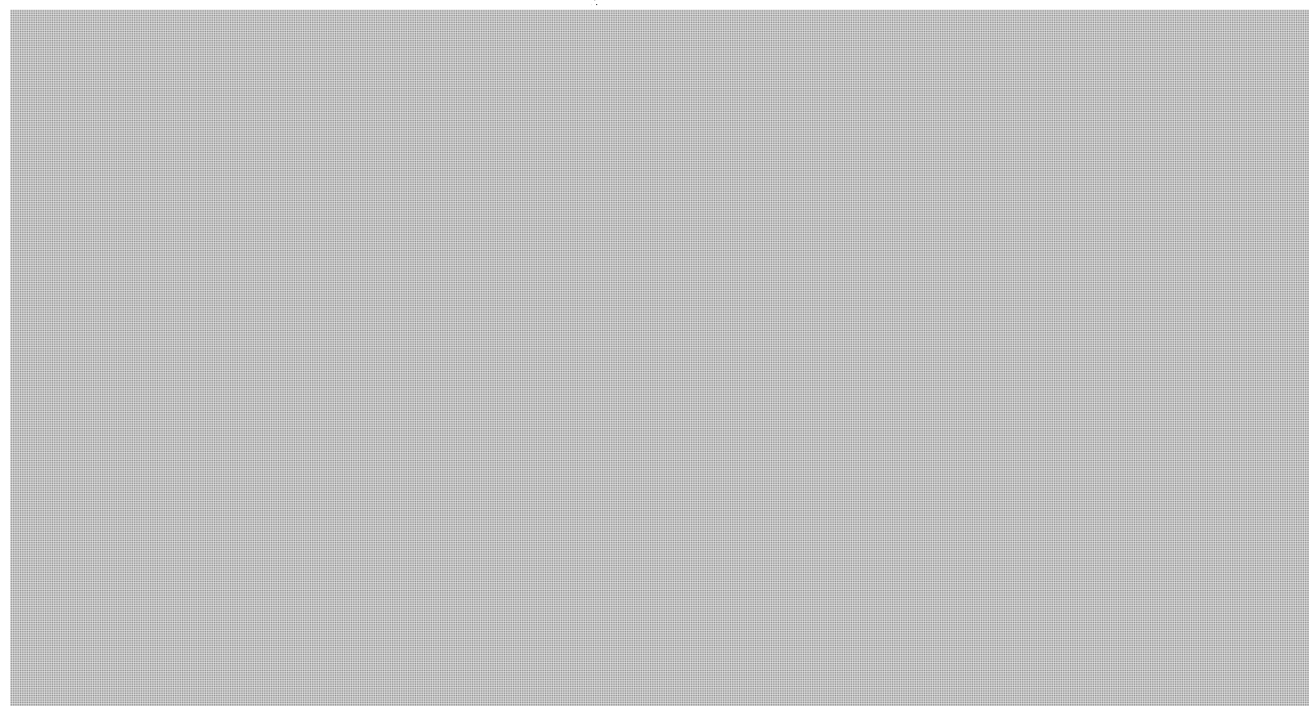


<b>Industrial Partner(s), Relevance and Benefits</b>				Meets	
				Does not meet	

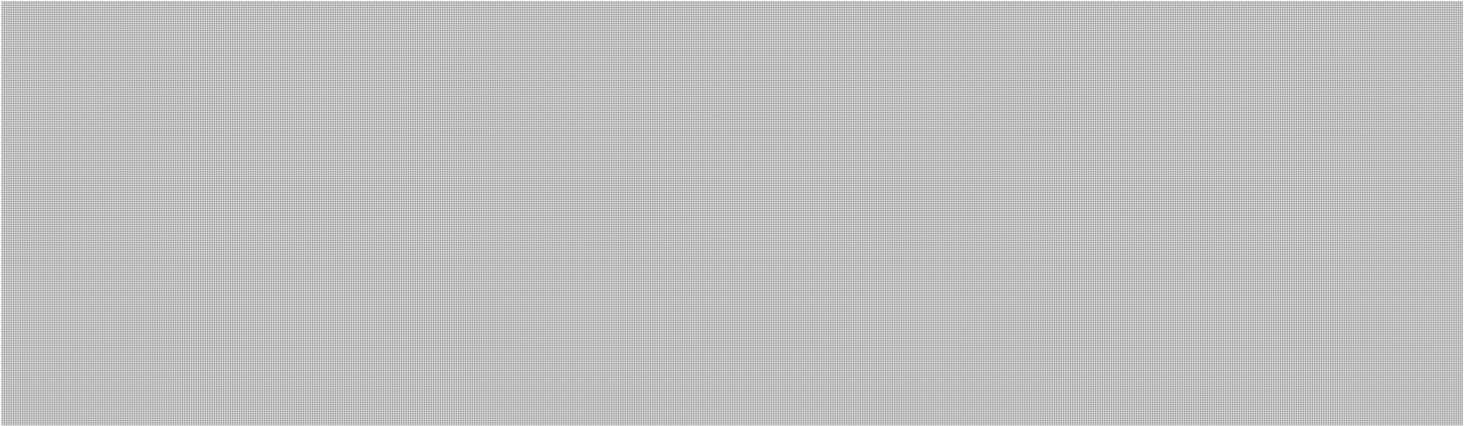




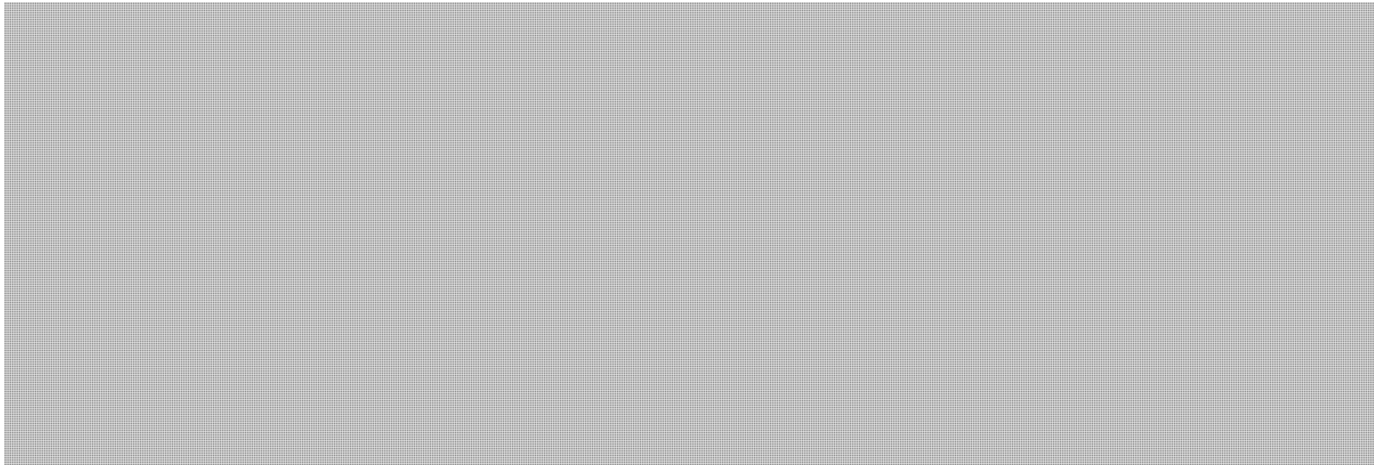
<b>Benefit to Canada</b>	Meets	
	Does not meet	



Budget		Meets	
		Does not meet	
Duration (years)		<b>Budget items:</b>	
Total request		Students salaries	
Year 1 request		PDF salaries	
Average request		Project Manager salary	
Total partner cash		Other salaries	
Total partner eligible in-kind		Equip. & facilities	
Cash leverage ratio		Material & supplies	
Cash & IK leverage ratio		Travel	
Funds not leveraged		Dissemination	
Total cost of the research		Tech. transfer activities	



**Conclusion and Recommendation**



<input type="checkbox"/>	Recommended for funding as requested
<input type="checkbox"/>	Recommended for funding at a reduced level
<input type="checkbox"/>	Condition to release funds:
<input type="checkbox"/>	Not recommended for funding



s.19(1)  
s.20(1)(b)  
s.20(1)(c)

**Amounts requested and recommended**

Year	Original Amounts Requested	Industrial Cash	Industrial In-kind (Total)	Industrial In-kind (Elicible)	Amounts Recommended
1	[REDACTED]				
2					
3					
Totals					

**RECOMMENDED:**

[REDACTED]

Christian Chouinard,  
Manager

29 June 2017  
Date

**RECOMMENDED/APPROVED IN ACCORDANCE WITH SECTIONS 32 AND 34 OF THE FAA**

[REDACTED]

**COMMENTS:**

30  
29 June 2017  
Date

*for*  
P. a Moss  
Director  
Research Partnerships

**Williams, Sylvia**

---

**From:** [redacted] <[redacted]>  
**Sent:** Tuesday, February 13, 2018 9:46 AM  
**To:** Williams, Sylvia  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Sylvia,

[redacted]

Best,

[redacted]

---

**From:** Williams, Sylvia [mailto:Sylvia.Williams@nserc-crsng.gc.ca]  
**Sent:** February 9, 2018 1:42 PM  
**To:** [redacted] <[redacted]>  
**Subject:** RE: CRDPJ 517550-17 - [redacted]

Dear [redacted]

[redacted]



Natural Sciences and Engineering Research Council of Canada / Conseil de recherches naturelles et en génie

Review Indiff  
formation  
source contact  
on file  
(outspoke email)

iewer 2



External Reviewer Report – Ap  
Rapport de l'évaluateur externe – I

Personal Data on the External Reviewer / Renseignements personnels sur l'évaluateur externe

Name / Nom: [redacted]  
 Institution / établissement: [redacted]  
 Department / département: Elec. Eng., Coll. of Eng.

Provide a maximum of 10 keywords that describe your area(s) of expertise. / Décrivez en dix (10) mots-clés au maximum votre ou vos domaines d'expertise.

n/a

Language capability / Compétences linguistiques

**English / Anglais**  
 Read / Lire: [redacted] Write / Écrire: [redacted] Speak / Parler: [redacted]

**French / Français**  
 Read / Lire: [redacted] Write / Écrire: [redacted] Speak / Parler: [redacted]

I wish to receive my correspondence in: Je désire que ma correspondance me soit adressée en :

English [redacted] Français [redacted]



**External Reviewer Report - Application for a Grant  
Rapport de l'évaluateur externe - Demande de subvention**

Family name, given name and initials(s) of applicant / Nom de famille, prénom et initiale(s) du candidat Van, Vien	Application no. / N° de la demande : 508309
Collaborative Research and Development Grant Subvention de recherche et développement coopérative	
Title / Titre : Development of flexible silicon photonic components for WDM optical networks	

<b>Confidence Level / Niveau de confiance</b>
I rate my ability to assess this particular application as / Mes compétences pour évaluer cette demande sont :
High / Elevées: <input type="checkbox"/> Satisfactory / Satisfaisantes: <input type="checkbox"/> Low / Faibles: <input type="checkbox"/>

**Please assess the proposal using the evaluation criteria below.  
Veuillez évaluer la demande selon les critères suivants.**



1 Scientific Merit / Mérite scientifique

- How clear and focused are the objectives of the research project?
- Does the research proposal demonstrate sufficient scientific merit and novelty?
- Are the timetable, experimental design and milestones appropriate and realistic?
- Are the proposed methods and techniques appropriate?
- If applicable: assess the impact of the previously undertaken research if this application is a continuation of a recently completed or nearly completed CRD project of significant magnitude.

- Assess the relevance and value of planned collaborations with the industry and other sponsors, and with departmental and other academic collaborators  
Is the overall program scientifically and technically feasible? Comment on specific strengths and weaknesses of the research program

Note on eligibility: Projects that focus on the application of existing technology, provide routine analysis, collect data without interpreting underlying mechanisms, or provide professional practice or consulting services (contract research) are not eligible.



## 2. Competence of the Research Team / Compétence de l'équipe de recherche

The research team under the leadership of the principal applicant are very strong and the industry linkage makes the team even stronger.

### Applicant and co-Applicants

- Has (have) the applicant(s) the scientific caliber/leadership and either the experience or the research potential to conduct all aspects of the proposed research, and has the applicant the ability to manage a large-scale research project where applicable? [REDACTED]
- Is the applicant(s) educational background and expertise in the particular field of research? [REDACTED]
- How familiar is (are) the applicant(s) with the pertinent scientific literature and techniques? [REDACTED]
- Have consultations with experts in interdisciplinary fields taken place when appropriate? [REDACTED]
- How relevant and important was the applicant(s)' recent productivity (papers published, patents obtained, symposia participated in, consulting undertaken)? [REDACTED]
- For larger projects, are the teaching and administrative loads of the applicant(s) appropriate (actual time available for research)? [REDACTED]
- Does the applicant(s)' training record/supervisory experience to date show an appropriate capacity to undertake the training proposed? [REDACTED]
- What is the extent and relevance of the applicant(s) experience and/or contacts with the user sector? [REDACTED]
- If applicable, does the applicant(s) record of accomplishment demonstrate success with respect to previous project funding in achieving the objectives, and in the transfer of technology to the benefit of the industrial partner(s)? [REDACTED]

### Group Applications

- How appropriate and balanced is the team with regard to the project? [REDACTED]
- How committed are individual group members to the research project? [REDACTED]
- How effective will the collaboration between group members and industrial partner(s) be? [REDACTED]
- If applicable, how cohesive has the group been to date and how well did the collaboration work out? [REDACTED]

### Research Personnel - Professional or Technical Support

- How well qualified are present and/or potential personnel involved in the proposed research activity? [REDACTED]

Considering all of the above, has it been demonstrated that the applicant(s) has (have) the research competence and leadership to accomplish what is laid out in the research proposal? AS STATED EARLIER: [REDACTED]



### 3. Training Opportunities / Occasions de formation

The research project should provide significant training opportunities for a number of undergraduate and graduate students, and postdoctoral fellows that is commensurate with the scope of the project. There should be significant opportunities for interactions with industry.

- Does the research program provide a relevant and valuable training opportunity for the proposed student(s) and postdoctoral fellow(s)? Are the topics of research proposed for the student(s) and postdoctoral fellow(s) appropriate for their respective levels? [REDACTED]
- Are the knowledge and experience to be gained by the student(s) and postdoctoral fellow(s) relevant to the advancement of the field, to developing practical applications of knowledge, or to strengthening the industrial research base? [REDACTED]
- Have the number of and level of proposed student(s) and postdoctoral fellow(s) been justified? (Refer to the Budget Justification). [REDACTED]
- Will the student(s) and postdoctoral fellow(s) be exposed and play an active role with the industrial partner(s) and what added values will this bring to their training? [REDACTED]
- What potential opportunities and value are there for the training of other skilled personnel (technicians, industrial partner staff, etc.)? [REDACTED]
- If support for research associates, technicians, technologists, project managers or other personnel is requested in the budget has it been properly justified in relation to the research objectives to be achieved? (Refer to the Budget Justification)

NSERC-Mitacs Joint funding opportunity:

Additional industry support through Mitacs Accelerate internships may be included in the CRD application to increase the number of students involved in the project or to provide opportunities for students to deepen their relationship with an industrial partner.

Mitacs internships are funded separately from the CRD grants by industry; however, NSERC conducts the peer review for joint CRD-Mitacs applications and communicates the results to Mitacs. If application information for Mitacs Accelerate Internship(s) is included, please review the additional information provided and indicate if the proposed project(s) is(are): at an appropriate level and scope for the intern(s) (Master's PhD or PDF), including the activities to be performed on site at the partner's premises, and comment on the extent of the planned interactions with the industrial partner (It is expected that a minimum of 50% of the Intern's time is spent on site at the partner's location, unless otherwise justified), and the expected benefits to the intern(s).

Does the research program proposed provide a stimulating and rich training environment for student(s) and postdoctoral fellow(s) and others (if applicable)? [REDACTED]

Note on student identification: Applicants should not be penalized for not having the specific names of students if generic information is provided. NSERC requires applicants to obtain consent forms from students before including their names on a Personal Data Form (Form 100). As this is not always feasible, applicants also have the option of providing information on students without providing their names (this information might be more generic).



**4. Industrial Relevance and Benefits / Pertinence et avantages pour l'industrie**

The proposal must demonstrate industrial relevance and, in addition to financially supporting the program, the industrial partner(s) must bring an active contribution to the research effort and have the capability and the willingness to exploit successful research results to the benefit of the Canadian economy in a reasonable time frame.

Relevance

- How relevant and important is the proposed research to the industrial partner(s) and to the Canadian industry needs? [REDACTED]
- How will the industry sector be impacted and what commercial opportunity can be expected, resulting from a successful completion of the project?

Endless sales of developed techniques for future applications.

Industrial partner(s)

- What are the motivations and expectations for supporting the project and how committed is (are) the industrial partner(s) to the research? [REDACTED]
- How well established and experienced is (are) the industrial partner (s) in the area and is the proposed research in its (their) line(s) of business? [REDACTED]
- What is the likelihood of the research results being exploited by the industrial partner(s) to the benefit for the Canadian economy? [REDACTED]

- Have the terms of the intellectual property agreement been discussed? Are there any issues with the proposed terms? [REDACTED]

- How relevant and valuable is the past (if applicable) and future involvement of industrial partner(s) staff in the research program? [REDACTED]

- Is the extent of the industrial partner(s)'s proposed support, including cash and in-kind contributions, relevant and sufficient? [REDACTED]

- Are any relevant equipment and/or facilities made available to the Candidate by the Industrial partner(s)? [REDACTED]

Do the above points demonstrate the potential for a strong mutually beneficial collaborative environment between all participants? Is(are) the industrial partner(s) bringing an active contribution to the research effort and do they have the capability and the willingness to exploit any successful research results in a reasonable time frame? [REDACTED]





**5. Benefits to Canada / Avantages pour le Canada**

In addition to the benefits to Canada described under the Industrial Relevance and Benefits criterion, the proposal should outline any economic, social, and/or environmental benefits that will or could be realized in Canada within a reasonable period.

- Are there any indications of any barriers to the realization of benefits (partner composition, intellectual property arrangements, etc.)?

Is it likely that the outlined benefits to Canada will be realized out of this proposed research program?

**University Support**

For large applications requiring a site visit. External Reviewers may comment on this criterion in the "Other Considerations" field in the online report.

Applications for large or complex projects must demonstrate adequate university support by detailing the specific commitments of the university regarding the provision of financial support, equipment, and/or facilities.

- Are the necessary equipment and facilities to conduct the research available and adequate?
- Are any required specialized materials available?
- Are there any specific commitments from the university to support the research program such as space,

technical assistance, operational funds, capital costs, and expansion of facilities)?

- Are there any other sources of funding available for the project?

Are the setting and university support sufficient and appropriate to accomplish what is laid out in the proposal?



**6. Budget**

The proposal must provide a detailed explanation and justification for each budget item. The proposed cost-sharing ratios between NSERC and the industrial partner must be explained and justified. A significant portion of the budget must be allocated to salaries for students and postdoctoral fellows.

- Are the amounts requested well justified? [redacted]
- Is the budget realistic, overestimated or underestimated? [redacted]
- Is there any overlap with other sources of support for the program? [redacted]
- Is the purchase of the proposed equipment well justified? [redacted]
- Is there an appropriate balance between the % of budget to be used for the training of student(s) and postdoctoral fellow(s) and that to be used for salaries of other research personnel? [redacted]
- Are there any other considerations pertinent to this application? [redacted]

**7. Other Considerations / Autres points à considérer**

Please provide a clear funding recommendation in accordance with your assessment of the application, based on the preceding criteria. Please note that all criteria must be met for the application to be funded. Your funding recommendation can be:

- To fund at the requested level; or pay more.
- To fund at a different level, or with conditions; or
- Not to fund the proposal. Please use the space below to:
- Refer to points raised earlier in your review to briefly summaries the rationale for your Recommendation; and
- Specify any conditions or details on funding changes, if applicable.



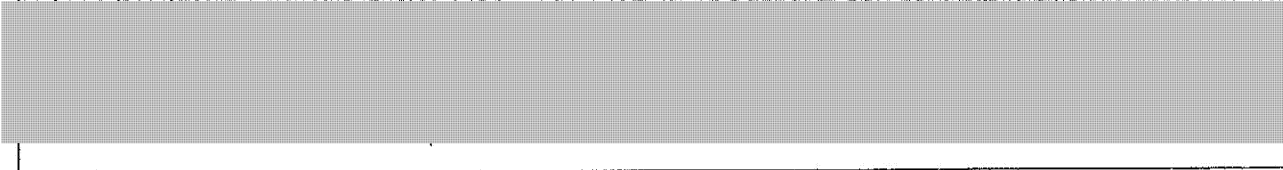
**Recommendation / Recommandation:**

On the balance of its strengths and weaknesses, would you recommend funding this proposal?

Compte tenu des forces et faiblesses, recommandez-vous le financement de cette demande ?

Yes / Oui	At the requested level / Au montant demandé
	At a different funding level (specify below) / À un montant différent (spécifier ci-dessous)
	With condition(s) (specify below) / Avec condition(s) (spécifier ci-dessous)
No / Non	Please summarize the reason(s) below / Veuillez résumer la(les) raison(s) ci-dessous

Specify / Spécifier





External Reviewer Report - Application for a Grant  
Rapport de l'évaluateur externe - Demande de subvention

Family name, given name and initials(s) of applicant / Nom de famille, prénom et initiale(s) du candidat Van, Vien	Application no. / N° de la demande : 508309
Collaborative Research and Development Grant Subvention de recherche et développement coopérative	
Title / Titre : Development of flexible silicon photonic components for WDM optical networks	

Confidence Level / Niveau de confiance

I rate my ability to assess this particular application as / Mes compétences pour évaluer cette demande sont :

High / Elevées:

Satisfactory / Satisfaisantes:

Low / Faibles:

Please assess the proposal using the evaluation criteria below.  
Veuillez évaluer la demande selon les critères suivants.



### 1 Scientific Merit / Mérite scientifique

The proposal addresses work on Silicon photonics, which is gaining widespread industry acceptance as a cost-effective platform for building photonic integrated circuits for optical communication applications. This is one of the most important needs for future of integrated photonics. The challenges need be addressed and proper practical solutions need be developed. In particular, silicon photonics offers the advantage of compatibility with the CMOS microelectronic fabrication process, which allows for seamless integration of photonic circuits with electronic devices on the same chip. In spite of its promising benefits, the full commercial potential of silicon photonics has yet to be realized, as a number of important technical challenges remain. This proposal aims to address two important challenges in the development of flexible silicon photonic circuits, namely, broadband wavelength tunability and scalability, both that are important for increasing the functionality and reducing the cost and footprint of optical components and subsystems. More specifically, these issues will be addressed through the development of two important components for Wavelength Division Multiplexing optical networks: a multi-channel multiplexer/demultiplexer circuit and a fast wavelength selector circuit. The successful outcome of project will help accelerate the adoption of silicon photonics technology into existing and future optical communication networks.

- How clear and focused are the objectives of the research project? [REDACTED]
  - Does the research proposal demonstrate sufficient scientific merit and novelty? [REDACTED]
  - Are the timetable, experimental design and milestones appropriate and realistic? [REDACTED]
  - Are the proposed methods and techniques appropriate? [REDACTED]
  - If applicable: assess the impact of the previously undertaken research if this application is a continuation of a recently completed or nearly completed CRD project of significant magnitude [REDACTED]
  - Assess the relevance and value of planned collaborations with the industry and other sponsors, and with departmental and other academic collaborators. [REDACTED]
- Is the overall program scientifically and technically feasible? Comment on specific strengths and weaknesses of the research program [REDACTED]

Note on eligibility: Projects that focus on the application of existing technology, provide routine analysis, collect data without interpreting underlying mechanisms, or provide professional practice or consulting services (contract research) are not eligible. [REDACTED]



## 2. Competence of the Research Team / Compétence de l'équipe de recherche

### Applicant and co-Applicants

- Has (have) the applicant(s) the scientific caliber/leadership and either the experience or the research potential to conduct all aspects of the proposed research, and has the applicant the ability to manage a large-scale research project where applicable?
- Is the applicant(s) educational background and expertise in the particular field of research?
- How familiar is (are) the applicant(s) with the pertinent scientific literature and techniques?
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- If applicable, does the applicant(s) record of accomplishment demonstrate success with respect to previous project funding in achieving the objectives, and in the transfer of technology to the benefit of the industrial partner(s)?

### Group Applications

- How appropriate and balanced is the team with regard to the project?
- How committed are individual group members to the research project?
- How effective will the collaboration between group members and industrial partner(s) be?
- If applicable, how cohesive has the group been to date and how well did the collaboration work out?

### Research Personnel - Professional or Technical Support

- How well qualified are present and/or potential personnel involved in the proposed research activity?

Considering all of the above, has it been demonstrated that the applicant(s) has (have) the research competence and leadership to accomplish what is laid out in the research proposal?



### 3. Training Opportunities / Occasions de formation

The research project should provide significant training opportunities for a number of undergraduate and graduate students, and postdoctoral fellows that is commensurate with the scope of the project. There should be significant opportunities for interactions with industry.

- Does the research program provide a relevant and valuable training opportunity for the proposed student(s) and postdoctoral fellow(s)? Are the topics of research proposed for the student(s) and postdoctoral fellow(s) appropriate for their respective levels? [REDACTED]
- Are the knowledge and experience to be gained by the student(s) and postdoctoral fellow(s) relevant to the advancement of the field, to developing practical applications of knowledge, or to strengthening the industrial research base? [REDACTED]
- Have the number of and level of proposed student(s) and postdoctoral fellow(s) been justified? (Refer to the Budget Justification) [REDACTED]
- Will the student(s) and postdoctoral fellow(s) be exposed and play an active role with the industrial partner(s) and what added values will this bring to their training? [REDACTED]
- What potential opportunities and value are there for the training of other skilled personnel (technicians, industrial partner staff, etc.) [REDACTED]
- If support for research associates, technicians, technologists, project managers or other personnel is requested in the budget has it been properly justified in relation to the research objectives to be achieved? (Refer to the Budget Justification)

NSERC-Mitacs Joint funding opportunity:

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Does the research program proposed provide a stimulating and rich training environment for student(s) and postdoctoral fellow(s) and others (if applicable)? [REDACTED]

Note on student identification: Applicants should not be penalized for not having the specific names of students if generic information is provided. NSERC requires applicants to obtain consent forms from students before including their names on a Personal Data Form (Form 100). As this is not always feasible, applicants also have the option of providing information on students without providing their names (this information might be more generic).



**4. Industrial Relevance and Benefits / Pertinence et avantages pour l'industrie**

The proposal must demonstrate industrial relevance and, in addition to financially supporting the program, the industrial partner(s) must bring an active contribution to the research effort and have the capability and the willingness to exploit successful research results to the benefit of the Canadian economy in a reasonable time frame.

Relevance

- How relevant and important is the proposed research to the industrial partner(s) and to the Canadian industry needs? [REDACTED]
- How will the industry sector be impacted and what commercial opportunity can be expected, resulting from a successful completion of the project?

Endless sales of developed techniques for future applications.

Industrial partner(s)

- What are the motivations and expectations for supporting the project and how committed is (are) the industrial partner(s) to the research? [REDACTED]
- How well established and experienced is (are) the industrial partner (s) in the area and is the proposed research in its (their) line(s) of business? [REDACTED]
- What is the likelihood of the research results being exploited by the industrial partner(s) to the benefit for the Canadian economy? [REDACTED]

- Have the terms of the intellectual property agreement been discussed? Are there any issues with the proposed terms? [REDACTED]

- How relevant and valuable is the past (if applicable) and future involvement of industrial partner(s) staff in the research program? [REDACTED]

- Is the extent of the industrial partner(s)'s proposed support, including cash and in-kind contributions, relevant and sufficient? [REDACTED]

- Are any relevant equipment and/or facilities made available to the Candidate by the Industrial partner(s)? [REDACTED]

Do the above points demonstrate the potential for a strong mutually beneficial collaborative environment between all participants? Is(are) the industrial partner(s) bringing an active contribution to the research effort and do they have the capability and the willingness to exploit any successful research results in a reasonable time frame? [REDACTED]





**5. Benefits to Canada / Avantages pour le Canada**

In addition to the benefits to Canada described under the Industrial Relevance and Benefits criterion, the proposal should outline any economic, social, and/or environmental benefits that will or could be realized in Canada within a reasonable period.

- Are there any indications of any barriers to the realization of benefits (partner composition, intellectual property arrangements, etc.)?

Is it likely that the outlined benefits to Canada will be realized out of this proposed research program?

**University Support**

For large applications requiring a site visit. External Reviewers may comment on this criterion in the "Other Considerations" field in the online report.

Applications for large or complex projects must demonstrate adequate university support by detailing the specific commitments of the university regarding the provision of financial support, equipment, and/or facilities.

- Are the necessary equipment and facilities to conduct the research available and adequate?
- Are any required specialized materials available?
- Are there any specific commitments from the university to support the research program such as space,

technical assistance, operational funds, capital costs, and expansion of facilities)?

- Are there any other sources of funding available for the project?

Are the setting and university support sufficient and appropriate to accomplish what is laid out in the proposal?



**6. Budget**

The proposal must provide a detailed explanation and justification for each budget item. The proposed cost-sharing ratios between NSERC and the industrial partner must be explained and justified. A significant portion of the budget must be allocated to salaries for students and postdoctoral fellows.

- Are the amounts requested well justified? [REDACTED]
- Is the budget realistic, overestimated or underestimated? [REDACTED]
- Is there any overlap with other sources of support for the program? [REDACTED]
- Is the purchase of the proposed equipment well justified? [REDACTED]
- Is there an appropriate balance between the % of budget to be used for the training of student(s) and postdoctoral fellow(s) and that to be used for salaries of other research personnel? [REDACTED]
- Are there any other considerations pertinent to this application? [REDACTED]

**7. Other Considerations / Autres points à considérer**

Please provide a clear funding recommendation in accordance with your assessment of the application, based on the preceding criteria. Please note that all criteria must be met for the application to be funded. Your funding recommendation can be:

- To fund at the requested level; or pay more.
- To fund at a different level, or with conditions; or
- Not to fund the proposal. Please use the space below to:
- Refer to points raised earlier in your review to briefly summaries the rationale for your Recommendation; and
- Specify any conditions or details on funding changes, if applicable.

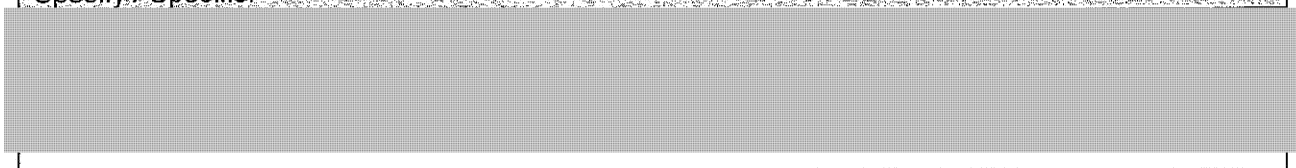


**Recommendation / Recommandation:**

On the balance of its strengths and weaknesses, would you recommend funding this proposal?

Compte tenu des forces et faiblesses, recommandez-vous le financement de cette demande ?

Yes / Oui	At the requested level / Au montant demandé
	At a different funding level (specify below) / À un montant différent (spécifier ci-dessous)
	With condition(s) (specify below) / Avec condition(s) (spécifier ci-dessous)
No / Non	Please summarize the reason(s) below / Veuillez résumer la(les) raison(s) ci-dessous
Specify / Spécifier	

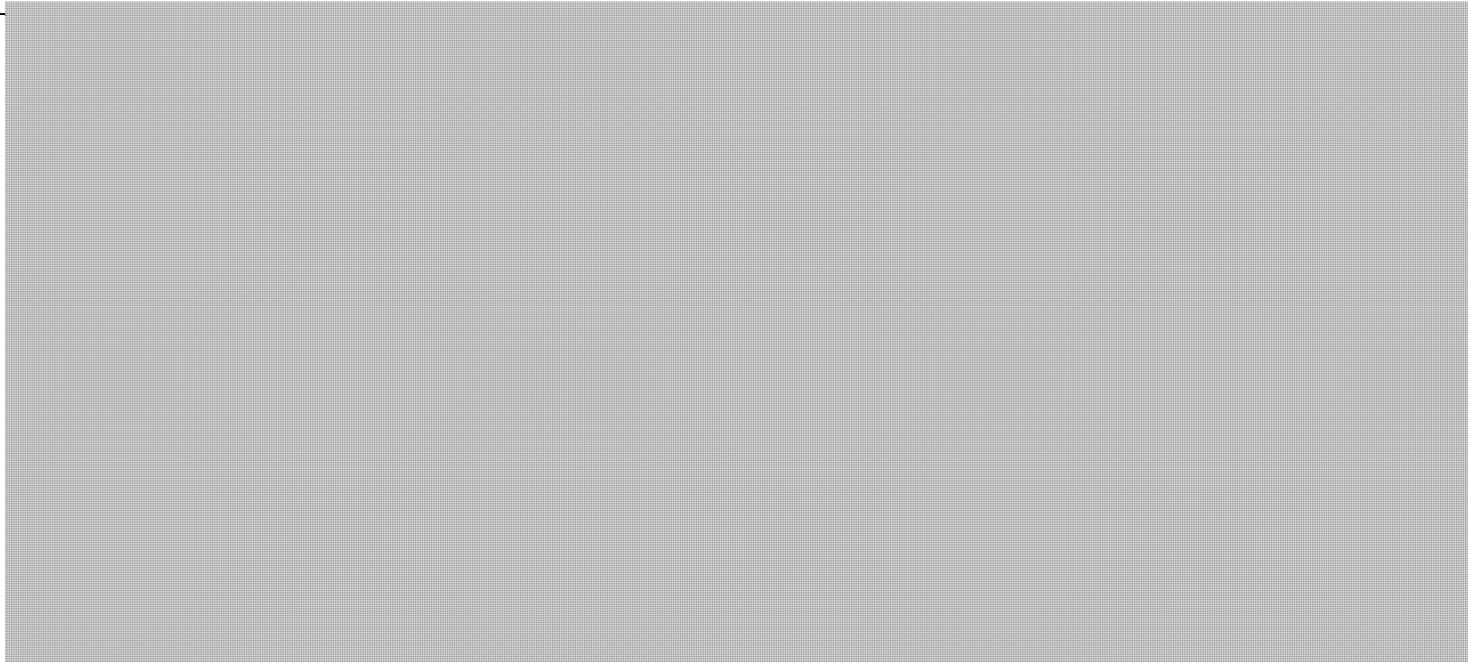


## REVIEW OF NSERC PROPOSAL: Van Vien 508309-2016

Guidelines to reviewers: Section C highlights the Evaluation Criteria. You may simply use those and use a plain Word document for your evaluation. Section D then asks if you would recommend funding or not.

### C - Evaluation Criteria

#### Scientific Merit



#### Research Project

- How clear and focused are the objectives of the research project? [redacted]
- Does the research proposal demonstrate sufficient scientific merit and novelty? [redacted]
- Are the timetable, experimental design and milestones appropriate and realistic? [redacted]
- Are the proposed methods and techniques appropriate? [redacted]
- **If applicable:** assess the impact of the previously undertaken research if this application is a continuation of a recently completed or nearly completed CRD project of significant magnitude [redacted]

#### Planned Collaborations

- Assess the relevance and value of planned collaborations with the industry and other sponsors, and with departmental and other academic collaborators [redacted]

*Is the overall program scientifically and technically feasible? Comment on specific strengths and weaknesses of the research program.* [redacted]

*Note on eligibility: Projects that focus on the application of existing technology, provide routine analysis, collect data without interpreting underlying mechanisms, or provide professional practice or consulting services (contract research) are not eligible.* [redacted]

### Competence of the Research Team

The research team under the leadership of the principal applicant are very strong and the industry linkage makes the team even stronger.

#### Applicant and co-Applicants

- Has (have) the applicant(s) the scientific caliber/leadership and either the experience or the research potential to conduct all aspects of the proposed research, and has the applicant the ability to manage a large-scale research project where applicable? [REDACTED]
- Is the applicant(s) educational background and expertise in the particular field of research? [REDACTED]
- How familiar is (are) the applicant(s) with the pertinent scientific literature and techniques? [REDACTED]
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- If applicable, does the applicant(s) record of accomplishment demonstrate success with respect to previous project funding in achieving the objectives, and in the transfer of technology to the benefit of the industrial partner(s)? [REDACTED]

#### Group Applications

- How appropriate and balanced is the team with regard to the project? [REDACTED]
- How committed are individual group members to the research project? [REDACTED]
- How effective will the collaboration between group members and industrial partner(s) be? [REDACTED]
- If applicable, how cohesive has the group been to date and how well did the collaboration work out? [REDACTED]

#### Research Personnel - Professional or Technical Support

- How well qualified are present and/or potential personnel involved in the proposed research activity? [REDACTED]

*Considering all of the above, has it been demonstrated that the applicant(s) has (have) the research competence and leadership to accomplish what is laid out in the research proposal? AS STATED EARLIER:* [REDACTED]

### Training Opportunities

The research project should provide significant training opportunities for a number of undergraduate and graduate students, and postdoctoral fellows that is commensurate with the scope of the project. There should be significant opportunities for interactions with industry.

- Does the research program provide a relevant and valuable training opportunity for the proposed student(s) and postdoctoral fellow(s)? Are the topics of research proposed for the student(s) and postdoctoral fellow(s) appropriate for their respective levels? [REDACTED]

- Are the knowledge and experience to be gained by the student(s) and postdoctoral fellow(s) relevant to the advancement of the field, to developing practical applications of knowledge, or to strengthening the industrial research base?
- Have the number of and level of proposed student(s) and postdoctoral fellow(s) been justified? (Refer to the Budget Justification).
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The proposal must demonstrate industrial relevance and, in addition to financially supporting the program, the industrial partner(s) must bring an active contribution to the research effort and have the capability and the willingness to exploit successful research results to the benefit of the Canadian economy in a reasonable time frame.

##### **Relevance**

- How relevant and important is the proposed research to the industrial partner(s) and to the Canadian industry needs?
- How will the industry sector be impacted and what commercial opportunity can be expected, resulting from a successful completion of the project?

### Industrial partner(s)

- What are the motivations and expectations for supporting the project and how committed is (are) the industrial partner(s) to the research? [REDACTED]
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**D – Recommendation**

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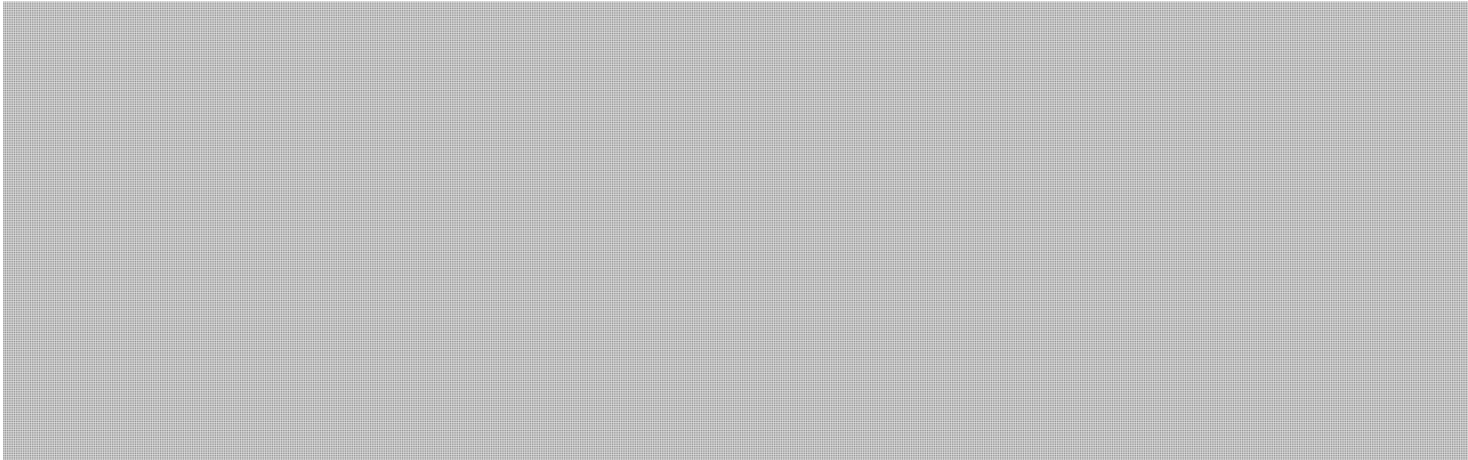
**D – Recommendation**

Turcotte, Lyne

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**From:** [REDACTED]  
**Sent:** Tuesday, May 23, 2017 9:57 AM  
**To:** [REDACTED]  
**Cc:** Turcotte, Lyne  
**Subject:** RE: Van\_Vien 508309-2016

Dear [REDACTED]



Thank you again for your time and patience.

Best regards,  
Christian

**Christian Chouinard, PhD**

**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

[christian.chouinard@nserc-crsng.gc.ca](mailto:christian.chouinard@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

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[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** May-22-17 10:22 AM  
**To:** Chouinard, Christian  
**Subject:** Fwd: Van\_Vien 508309-2016

Dear Christian,



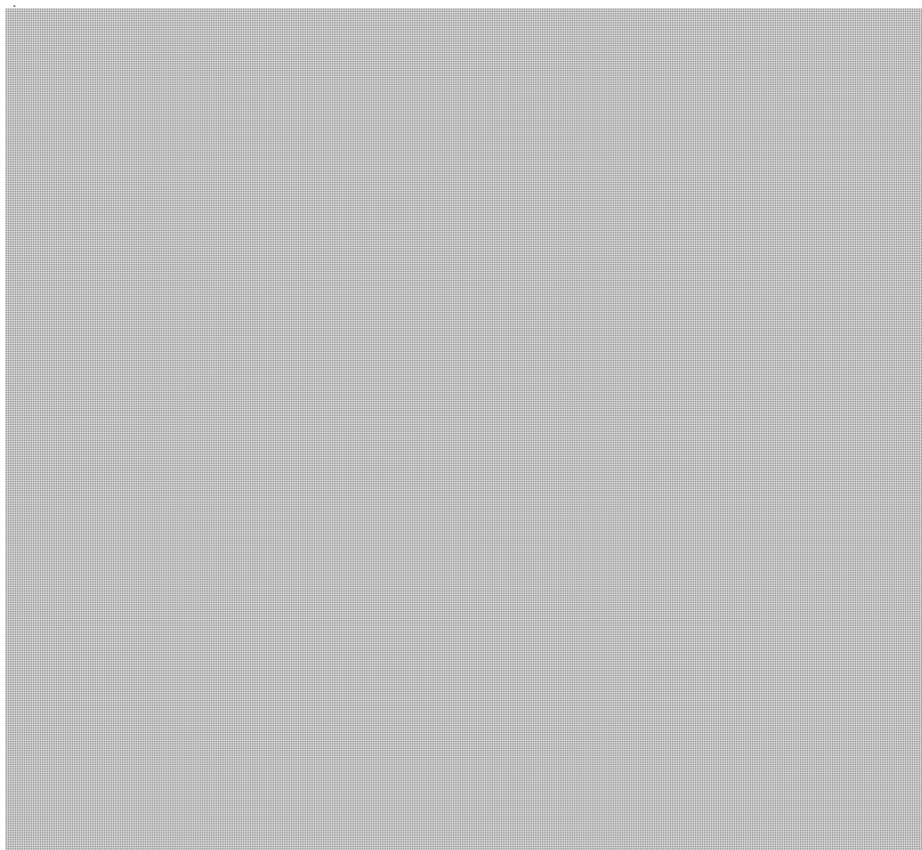
The review form was not loaded.





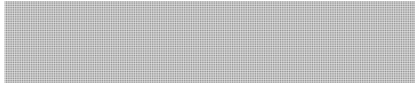
**From:** [redacted] [mailto:[redacted]]  
**Sent:** May-17-17 10:39 PM  
**To:** Chouinard,Christian  
**Subject:** Van\_Vien 508309-2016

Dear Christian,



You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,



Christian Chouinard  
Manager  
Research Partnerships

Telephone: (613) 995-8124  
Fax: (613) 992-5337  
E-Mail: [Christian.Chouinard@nserc-crsng.gc.ca](mailto:Christian.Chouinard@nserc-crsng.gc.ca)

CC/lt

Cc:  Research, Alberta  
Technologies Canada



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

March 31, 2017

File: CRDPJ 508309 - 16

Dr. V. Van  
Dept. of Electrical and Computer Eng.  
University of Alberta  
11-203 DONADEO INNO CTR FOR ENGINEERING  
9211 116 ST NW  
EDMONTON AB T6G 1H9

Dear Dr. Van:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Development of flexible silicon photonic components for WDM optical  
networks", with Huawei Technologies Canada**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

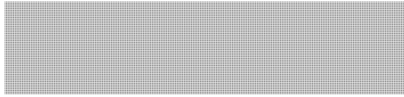
I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks. If minor issues are raised, we may offer you the opportunity to address these concerns. Your response may then be sent back to the reviewers for further comment.

If your application is awarded, you may be required to produce a signed Research Agreement conforming to NSERC's IP Policy: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/ip-pj\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/ip-pj_eng.asp). If this is the case, the award will be conditional upon NSERC's approval of the final signed Research Agreement. This agreement must be received by NSERC within 6 months of the date of the conditional offer, **after which the letter of offer will be withdrawn**. You are therefore encouraged to start discussions with your partner(s) as soon as possible.

NSERC will attempt to reach a funding decision within ninety (90) days of receipt of a complete application and where no additional issues are raised during the peer review process. I will keep you informed of any significant delays.

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.

Sincerely,



Christian Chouinard  
Manager  
Research Partnerships

Telephone: (613) 995-8124  
Fax: (613) 992-5337  
E-Mail: [Christian.Chouinard@nserc-crsng.gc.ca](mailto:Christian.Chouinard@nserc-crsng.gc.ca)

CC/It

Cc: [Redacted] Research, Alberta  
[Redacted] Huawei Technologies Canada

Pamela Mass  
 Director/Directrice  
 Manufacturing, Communications and Technologies/  
 Division de la fabrication, des communications et des technologies  
 Research Partnerships Programs/Programmes de partenariats de recherche  
 Tel/Tél: 613-943-1998

DATE: Mar 29 FILE: 508 ~~309~~ 309-16

TO/A: Christian

To be completed with all new applications /  
 À être complété pour chaque nouvelle demande

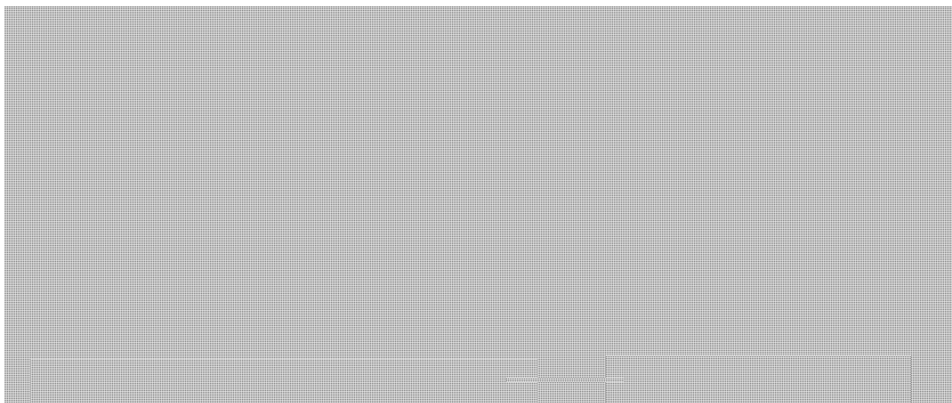
**DESIGNATED BUDGET TARGETED FUNDS /  
 BUDGET ALLOUÉ AUX DOMAINES CIBLÉS :**

\*Question: Could we fund this application from a targeted area?

\*Question : Pourrait-on payer d'un domaine ciblé?

- |  |  |
|--|--|
| <input type="checkbox"/> 00 None/<br>00 Aucun  | <input type="checkbox"/> B1 Auto (2008)/<br>B1 Auto (2008)                 |
| <input type="checkbox"/> A1 Energy (2007)/<br>A1 Énergie (2007)  | <input type="checkbox"/> B2 Fisheries (2008)/<br>B2 Pêches (2008)          |
| <input type="checkbox"/> A2 Environment (2007)/<br>A2 Environnement (2007)   | <input type="checkbox"/> B3 Forestry (2008)/<br>B3 Foresterie (2008)       |
| <input type="checkbox"/> A3 Information & Communication<br>Technologies (2007)/<br>A3 Technologies de l'information<br>et des communications (2007)                | <input type="checkbox"/> B4 Manufacturing (2008)/<br>B4 Fabrication (2008) |
| <input type="checkbox"/> A4 Colab. Interdisciplinary or<br>Int. Training Opp. (2007)/<br>A4 Colab. Interdisciplinaire &<br>opp. Formation int. (2007)<br>*aka SNEI | <input type="checkbox"/> Other _____<br>Autre                              |

MESSAGE:



*I have a copy*



For NSERC office use only
508209

**Form 101 - Application for a Grant**

**Send to NSERC with your attachments, if applicable**

**Reference Number:** 401177126

**Date Printed:** 2017/03/28 06:02

**Applicant:** Vien Van  
Alberta

**NSERC PIN:** [REDACTED]

**NSERC PIN Validated:** Yes

**Date Approved by RGO:** 2017/03/27 18:44

**Program:** Collaborative Research and Development Grant

**Application Title:** Development of Flexible Silicon Photonic Components for WDM Optical Networks

Vien Van

**Form 101 - Application for a Grant**

**Electronic Attachments:**

- Budget Justification - budget
- Contributions from Supporting Organizations - Attachment - contributions from supporting organization
- Relationship To Other Research Support - research support
- Proposal - proposal
- References - references
- Intellectual Property - Attachment - research agreement
- Other Documents - Financial overview

Vien Van

**F100/Personal Data Form**

**Electronic Attachments:**

- Contributions - contributions

Masum Hossain

**F100/Personal Data Form**

**Electronic Attachments:**

- Contributions - Contributions

Vien Van

**Form 183A - Information Required from Organizations Participating in RPP (submitted by applicant)**

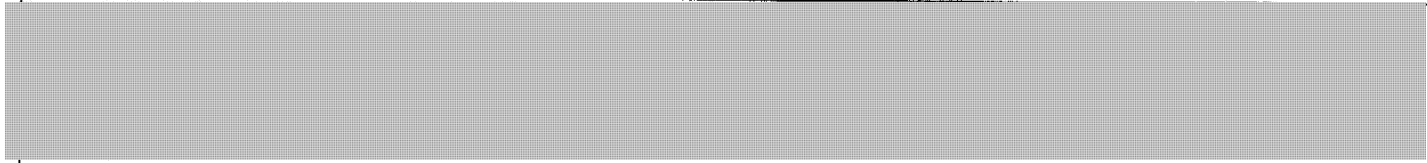
**Electronic Attachments:**

- Letter(s) of support - letter\_of\_support
- Company Profile - company profile

Personal identification no. (PIN)	Family name of applicant	s.20(1)(c)
Valid [REDACTED]	Van	

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



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**sont retenues en vertu des articles**  
  
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**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

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**of the Access to Information Act  
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s.19(1)  
s.20(1)(b)  
s.20(1)(c)

Program Id	Enterprise link	Supporting Organization	Appl_ID-CompYear	Received Date	Min Offered Date	Award Status English	Applicant's Name	Hosting Org	Program Officer	Conditional Offered Letter on file (Yes/No)	IP Agreement on file (Yes/No)	IP Checklist on file (Yes/No)	Communications re: IP Agreement on file (Yes/No)
CRDPJ	<a href="#">Wong, Bernard 537381-18</a>	Huawei Technologies Co., Ltd.	537381-2018				Wong, Bernard B	Waterloo	Bernier, Annie-France A-F				
NETGP	<a href="#">Moshovos, Andreas 485577-15</a>	Huawei Technologies Co., Ltd.	485577-2015				Moshovos, Andreas AM	Toronto	Boughaba, Samir S				
CRDPJ	<a href="#">Salihoglu, Semih 531863-18</a>	Huawei Technologies Co., Ltd.	531863-2018				Salihoglu, Semih S	Waterloo	Boughaba, Samir S				
CRDPJ	<a href="#">Shi, Wei 538381-18</a>	Huawei Technologies Co., Ltd.	538381-2018				Shi, Wei W	Laval	Boughaba, Samir S				
CRDPJ	<a href="#">LaRochelle, Sophie 538379-18</a>	Huawei Technologies Co., Ltd.	538379-2018				LaRochelle, Sophie S	Laval	Boughaba, Samir S				
CRDPJ	<a href="#">Sheikholeslami, Ali 537348-18</a>	Huawei Technologies Co., Ltd.	537348-2018				Sheikholeslami, Ali A	Toronto	Caron, Marie-Claude M-C				
CRDPJ	<a href="#">Damen, Mohamed Oussama 508260-16</a>	Huawei Technologies Co., Ltd.	508260-2016				Damen, Mohamed Oussama MO	Waterloo	Cecile, Joseph J				
CRDPJ	<a href="#">Johns, David 536624-18</a>	Huawei Technologies Co., Ltd.	536624-2018				Johns, David DA	Toronto	Cecile, Joseph J				
CRDPJ	<a href="#">Mashitizadeh, Ali 536639-18</a>	Huawei Technologies Co., Ltd.	536639-2018				Mashitizadeh, Ali AJM	Waterloo	Cecile, Joseph J				
CRDPJ	<a href="#">Van, Vien 508309-2016</a>	Huawei Technologies Co., Ltd.	508309-2016				Van, Vien V	Alberta	Chouinard, Christian C				

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

CRDPJ	<a href="#">Wang, Xianbin 509801-17</a>	Huawei Technologies Co., Ltd.	509801-2017		Wang, Xianbin X	Western Ontario	Chouinard, Christian C	
CRDPJ	<a href="#">Gross, Warren 506041-16</a>	Huawei Technologies Co., Ltd.	506041-2016		Gross, Warren WJ	McGill	Ionescu, Andrei AR	
CRDPJ	<a href="#">Rusch, Leslie Ann 515539-17</a>	Huawei Technologies Co., Ltd.	515539-2017		Rusch, Leslie Ann LA	Laval	Ionescu, Andrei AR	
CRDPJ	<a href="#">Lütkenhaus, Norbert 522308-17</a>	Huawei Technologies Co., Ltd.	522308-2017		Lütkenhaus, Norbert N	Waterloo	Ionescu, Andrei AR	
CRDPJ	<a href="#">Kschischang, Frank 532053-18</a>	Huawei Technologies Co., Ltd.	532053-2018		Kschischang, Frank FR	Toronto	Ionescu, Andrei AR	
CRDPJ	<a href="#">Berini, Pierre 533970-18</a>	Huawei Technologies Co., Ltd.	533970-2018		Berini, Pierre P	Ottawa	Ionescu, Andrei AR	
CRDPJ	<a href="#">Wong, Bernard (previously Keshav, S.) 536506-2018</a>	Huawei Technologies Co., Ltd.	536506-2018		Wong, Bernard B	Waterloo	Ionescu, Andrei AR	
CRDPJ	<a href="#">Al Kiswany, Samer 537905-18</a>	Huawei Technologies Co., Ltd.	537905-2018		Al Kiswany, Samer SI	Waterloo	Ionescu, Andrei AR	
CRDPJ	<a href="#">Shen, Xuemin Sherman 538476-18</a>	Huawei Technologies Co., Ltd.	538476-2018		Shen, Xuemin X	Waterloo	Ionescu, Andrei AR	
CRDPJ	<a href="#">Labahn, George 539433-19</a>	Huawei Technologies Co., Ltd.	539433-2019		Labahn, George G	Waterloo	Ionescu, Andrei AR	
CRDPJ	<a href="#">Lie, David 541942-19</a>	Huawei Technologies Co., Ltd.	541942-2019		Lie, David DJ	Toronto	Ionescu, Andrei AR	
CRDPJ	<a href="#">Lampe, Lutz 533529-18</a>	Huawei Technologies Co., Ltd.	533529-2018		Lampe, Lutz L	British Columbia	Ivan, Marius Gabriel MG	
CRDPJ	<a href="#">Sargent, Edward 534030-18</a>	Huawei Technologies Co., Ltd.	534030-2018		Sargent, Edward EH	Toronto	Ivan, Marius Gabriel MG	
IIRCPJ	<a href="#">Project 365566-18 Term 2</a>	Huawei Technologies Co., Ltd.	365566-2018		Le-Ngoc, Tho T	McGill	Ivan, Marius Gabriel MG	
CRDPJ	<a href="#">Zhuang, Weihua 505269-16</a>	Huawei Technologies Co., Ltd.	505269-2016		Zhuang, Weihua W	Waterloo	Langlois, Sylvain S	
CRDPJ	<a href="#">Chan Carusone, Anthony 505827-16</a>	Huawei Technologies Co., Ltd.	505827-2016		Chan Carusone, Anthony A	Toronto	Langlois, Sylvain S	
NETGP	<a href="#">Dudek, Gregory 508451-17</a>	Huawei Technologies Co., Ltd.	508451-2017		Dudek, Gregory GL	McGill	Langlois, Sylvain S	
CRDPJ	<a href="#">Chrostowski, Lukas 523096-17</a>	Huawei Technologies Co., Ltd.	523096-2017		Chrostowski, Lukas L	British Columbia	Langlois, Sylvain S	
CRDPJ	<a href="#">Ozsu, Tamer 538924-19</a>	Huawei Technologies Co., Ltd.	538924-2019		Ozsu, M. Tamer MT	Waterloo	Langlois, Sylvain S	
CRDPJ	<a href="#">Yu, Wei 503886-16</a>	Huawei Technologies Co., Ltd.	503886-2016		Yu, Wei W	Toronto	Lapointe, Kevin K	
CRDPJ	<a href="#">Al Kiswany, Samer 531857-18</a>	Huawei Technologies Co., Ltd.	531857-2018		Al Kiswany, Samer SI	Waterloo	Lapointe, Kevin K	
CRDPJ	<a href="#">Brown, Trevor 539431-19</a>	Huawei Technologies Co., Ltd.	539431-2019		Brown, Trevor TA	Waterloo	Martin, Linda L	
CRDPJ	<a href="#">Krishnamurthy, Diwakar 513200-17</a>	Huawei Technologies Co., Ltd.	513200-2017		Krishnamurthy, Diwakar D	Calgary	Nsiama, Tienabe T	
CRDPJ	<a href="#">Boutaba, Raouf 530327-18</a>	Huawei Technologies Co., Ltd.	530327-2018		Boutaba, Raouf R	Waterloo	Nsiama, Tienabe T	

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

IRCPJ	<a href="#">Rusch, Lapointe 537311-18</a>	Huawei Technologies Co., Ltd.	546377-2018	[REDACTED]	Rusch, Leslie Ann LA	Laval	Remmler, Lauren LM	[REDACTED]
CRDPJ	<a href="#">Wu, Xiaolin 517550-17</a>	Huawei Technologies Co., Ltd.	517550-2017	[REDACTED]	Wu, Xiaolin X	McMaster	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Lampe, Lutz 517950-17</a>	Huawei Technologies Co., Ltd.	517950-2017	[REDACTED]	Lampe, Lutz L	British Columbia	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Lo, Hoi-Kwong 522368-17</a>	Huawei Technologies Co., Ltd.	522368-2017	[REDACTED]	Lo, Hoi-Kwong HK	Toronto	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Toman, David 531861-18</a>	Huawei Technologies Co., Ltd.	531861-2018	[REDACTED]	Toman, David D	Waterloo	Williams, Sylvia S	[REDACTED]

CRDPJ	<u>Wang, Xianbin 509801-17</u>	Huawei Technologies Co., Ltd.	509801-2017	Wang, Xianbin X	Western Ontario	Chouinard, Christian C	
CRDPJ	<u>Gross, Warren 506041-16</u>	Huawei Technologies Co., Ltd.	506041-2016	Gross, Warren WJ	McGill	Ionescu, Andrei AR	
CRDPJ	<u>Rusch, Leslie Ann 515539-17</u>	Huawei Technologies Co., Ltd.	515539-2017	Rusch, Leslie Ann LA	Laval	Ionescu, Andrei AR	
CRDPJ	<u>Lütkenhaus, Norbert 522308-17</u>	Huawei Technologies Co., Ltd.	522308-2017	Lütkenhaus, Norbert N	Waterloo	Ionescu, Andrei AR	
CRDPJ	<u>Kschischang, Frank 532053-18</u>	Huawei Technologies Co., Ltd.	532053-2018	Kschischang, Frank FR	Toronto	Ionescu, Andrei AR	
CRDPJ	<u>Berini, Pierre 533970-18</u>	Huawei Technologies Co., Ltd.	533970-2018	Berini, Pierre P	Ottawa	Ionescu, Andrei AR	
CRDPJ	<u>Wong, Bernard (previously Keshav, S.) 536506-2018</u>	Huawei Technologies Co., Ltd.	536506-2018	Wong, Bernard B	Waterloo	Ionescu, Andrei AR	
CRDPJ	<u>Al Kiswany, Samer 537905-18</u>	Huawei Technologies Co., Ltd.	537905-2018	Al Kiswany, Samer SI	Waterloo	Ionescu, Andrei AR	
CRDPJ	<u>Shen, Xuemin Sherman 538476-18</u>	Huawei Technologies Co., Ltd.	538476-2018	Shen, Xuemin X	Waterloo	Ionescu, Andrei AR	
CRDPJ	<u>Labahn, George 539433-19</u>	Huawei Technologies Co., Ltd.	539433-2019	Labahn, George G	Waterloo	Ionescu, Andrei AR	
CRDPJ	<u>Lie, David 541942-19</u>	Huawei Technologies Co., Ltd.	541942-2019	Lie, David DJ	Toronto	Ionescu, Andrei AR	
CRDPJ	<u>Lampe, Lutz 533529-18</u>	Huawei Technologies Co., Ltd.	533529-2018	Lampe, Lutz L	British Columbia	Ivan, Marius Gabriel MG	
CRDPJ	<u>Sargent, Edward 534030-18</u>	Huawei Technologies Co., Ltd.	534030-2018	Sargent, Edward EH	Toronto	Ivan, Marius Gabriel MG	
IIRCPJ	<u>Project 365566-18 Term 2</u>	Huawei Technologies Co., Ltd.	365566-2018	Le-Ngoc, Tho T	McGill	Ivan, Marius Gabriel MG	
CRDPJ	<u>Zhuang, Weihua 505269-16</u>	Huawei Technologies Co., Ltd.	505269-2016	Zhuang, Weihua W	Waterloo	Langlois, Sylvain S	
CRDPJ	<u>Chan Carusone, Anthony 505827-16</u>	Huawei Technologies Co., Ltd.	505827-2016	Chan Carusone, Anthony A	Toronto	Langlois, Sylvain S	
NETGP	<u>Dudek, Gregory 508451-17</u>	Huawei Technologies Co., Ltd.	508451-2017	Dudek, Gregory GL	McGill	Langlois, Sylvain S	
CRDPJ	<u>Chrostowski, Lukas 523096-17</u>	Huawei Technologies Co., Ltd.	523096-2017	Chrostowski, Lukas L	British Columbia	Langlois, Sylvain S	
CRDPJ	<u>Ozsu, Tamer 538924-19</u>	Huawei Technologies Co., Ltd.	538924-2019	Ozsu, M. Tamer MT	Waterloo	Langlois, Sylvain S	
CRDPJ	<u>Yu, Wei 503886-16</u>	Huawei Technologies Co., Ltd.	503886-2016	Yu, Wei W	Toronto	Lapointe, Kevin K	
CRDPJ	<u>Al Kiswany, Samer 531857-18</u>	Huawei Technologies Co., Ltd.	531857-2018	Al Kiswany, Samer SI	Waterloo	Lapointe, Kevin K	
CRDPJ	<u>Brown, Trevor 539431-19</u>	Huawei Technologies Co., Ltd.	539431-2019	Brown, Trevor TA	Waterloo	Martin, Linda L	
CRDPJ	<u>Krishnamurthy, Diwakar 513200-17</u>	Huawei Technologies Co., Ltd.	513200-2017	Krishnamurthy, Diwakar D	Calgary	Nsiama, Tienabe T	
CRDPJ	<u>Boutaba, Raouf 530327-18</u>	Huawei Technologies Co., Ltd.	530327-2018	Boutaba, Raouf R	Waterloo	Nsiama, Tienabe T	

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**Page 913**

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s.19(1)  
s.20(1)(b)  
s.20(1)(c)

IRCPJ	<a href="#">Rusch, Leslaine 537311-38</a>	Huawei Technologies Co., Ltd.	546377-2018	[REDACTED]	Rusch, Leslie Ann LA	Laval	Remmler, Lauren LM	[REDACTED]
CRDPJ	<a href="#">Wu, Xiaolin 517550-17</a>	Huawei Technologies Co., Ltd.	517550-2017	[REDACTED]	Wu, Xiaolin X	McMaster	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Lampe, Lutz 517950-17</a>	Huawei Technologies Co., Ltd.	517950-2017	[REDACTED]	Lampe, Lutz L	British Columbia	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Lo, Hoi-Kwong 522368-17</a>	Huawei Technologies Co., Ltd.	522368-2017	[REDACTED]	Lo, Hoi-Kwong HK	Toronto	Williams, Sylvia S	[REDACTED]
CRDPJ	<a href="#">Toman, David 531861-38</a>	Huawei Technologies Co., Ltd.	531861-2018	[REDACTED]	Toman, David D	Waterloo	Williams, Sylvia S	[REDACTED]

**Boughaba, Samir**

---

**From:** Boughaba, Samir  
**Sent:** Tuesday, October 30, 2018 9:43 AM  
**To:** [REDACTED]  
**Subject:** RE: COHESA Network Agreement

Dear [REDACTED]

Thank you very much for providing us with a copy of the executed agreement and for your tireless efforts to complete this important milestone for the network.

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

-----  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone : 613-995-5710

Fax | Télécopieur : 613-992-5337

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** Monday, October 29, 2018 12:21 PM  
**To:** Boughaba, Samir  
**Subject:** COHESA Network Agreement

Dear Samir,

[REDACTED]

Best regards,

[REDACTED]

## **NETWORK AGREEMENT**

### **NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS (NSERC - COHESA)**

This Agreement, effective as of June 30, 2016 (the "Effective Date"), between:

**THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO ("LEAD INSTITUTION")**

- and -

**UNIVERSITÉ DE MONTRÉAL ("UdeM")**

- and -

**CORPORATION DE L'ÉCOLE POLYTECHNIQUE DE MONTRÉAL ("POLYTECH")**

- and -

**THE UNIVERSITY OF BRITISH COLUMBIA ("UBC")**

- and -

**SIMON FRASER UNIVERSITY ("SFU")**

- and -

**THE GOVERNORS OF THE UNIVERSITY OF ALBERTA**  
A corporation continued under the Post-secondary Learning Act (Alberta)  
("UofA")

- and -

**THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/MCGILL UNIVERSITY  
("MCGILL")**

- and -

**UNIVERSITY OF VICTORIA ("UVic")**  
A corporation continued under the University Act of British Columbia,  
3800 Finnerty Road, Victoria, British Columbia, V8P 5C2



Individually referred to herein as an “**Institution**” and collectively referred to herein as the “**Institutions**”

-and-

**ADVANCED MICRO DEVICES (“AMD”)**

-and-

**INTEL (“INTEL”)**

-and-

**HUAWEI TECHNOLOGIES CANADA (“HUAWEI”)**

-and-

**GOOGLE CANADA CORPORATION (“GOOGLE”)**

-and-

**QUALCOMM CANADA INC (“QUALCOMM”)**

Individually referred to herein as an “**Industry Partner**” and collectively referred to herein as the “**Industry Partners**”

Institutions and Industry Partners are hereinafter referred to individually as a “**Party**” and collectively as “**Parties**”.

**WHEREAS**, the Parties are participating in the **NSERC COHESA: Computing Hardware for Emerging Sensory Applications** (the “**Network**”), which is funded by a grant under the Strategic Partnerships Grants for Networks Program (the “**Grant**”) from the Natural Sciences and Engineering Research Council (“**NSERC**”);

**AND WHEREAS**, each Party, at its discretion, may determine the extent to which it will contribute proprietary Background Intellectual Property to the Network as defined in **Schedule 7**;

**AND WHEREAS**, certain research activities will be funded through the Network and will be carried out at the Institutions;

**AND WHEREAS**, NSERC requires the Parties to enter into an agreement setting out the obligations of the Parties and providing for such matters as governance, reporting requirements, use of research funds, and ownership and exploitation of intellectual property;

**NOW, THEREFORE**, in consideration of the premises and the mutual covenants that follow, the Parties agree as follows:

## 1.0 DEFINITIONS

1.1 **Definitions.** In addition to any words defined above, the following words shall have the following meanings in this Agreement:

- (a) **"Board"** means any board of directors or other advisory council that may be established by the Institutions to have overall responsibility for the management, direction and accountability of Network activities.
- (b) **"Background Intellectual Property"** or **"Background IP"** means individually and collectively, all Intellectual Property developed, produced or obtained by a Party outside of the Network Research Projects, including any enhancements or modifications thereto, which were conceived, created or developed prior to, or independent of, any Network Research Projects.
- (c) **"Confidential Information"** means, to the extent described in Section 4.10(a), any information, technical data or know-how in whatever form, including, but not limited to, descriptions, drawings, compositions, business and financial information, computer software, documented information, machine readable or interpreted information, information contained in physical components, mask works and artwork disclosed by a Party (the **"Disclosing Party"**) to another Party (the **"Receiving Party"**) which are clearly identified as being confidential or proprietary. Information transmitted orally or visually shall be considered to be Confidential Information only if such Confidential Information is identified by the Disclosing Party before disclosure, reduced to written summary form, marked as being confidential or proprietary by the Disclosing Party, and provided to the Receiving Party within thirty (30) days after such oral or visual transmission. Confidential Information does not include information which can be shown by documentary evidence was:
  - i. developed by the Receiving Party independently of the Disclosing Party's Confidential Information as supported by the Receiving Party's written records;
  - ii. rightfully obtained without restriction by the Receiving Party from a third party;
  - iii. publicly available other than through the fault or negligence of the Receiving Party;
  - iv. released without restriction by the Disclosing Party to anyone as supported by the Receiving Party's written records;
  - v. known to the Receiving Party at the time of its disclosure, without an existing duty to protect the information; or,
  - vi. required to be disclosed by law.
- (d) **"Industry Partners"** mean collectively the industry partners participating in the Network being AMD, Intel, Huawei, Google, and Qualcomm. Industry Partners will also include Board approved new industry partners that may participate in the Network under an amended agreement.
- (e) **"Institutions"** mean individually or collectively the universities participating in the Network being the Lead Institution, UdeM, Polytech, UBC, SFU, UofA, McGill and UVic.

- (f) **“Intellectual Property”** means any technology, invention, formula, method, development computer software (including source code and all related documentation), process, machine, device, manufacture, composition of material, compilation of information, data, database, or any improvement thereof, and including all related intellectual property rights such as patents, copyrights, trade-marks and other proprietary rights.
- (g) **“Lead Institution”** means the University of Toronto, or such other Institution as may be designated by the Board and confirmed in writing to the Parties as responsible for the general administration of Network activities and the Grant.
- (h) **“Material”** means the chemical or biological materials transferred from one Party to another Party in order to perform a Network Research Project, as will be defined in a separate Material Transfer Agreement (“MTA”) if required.
- (i) **“Network Funds”** means all funds received and administered by the Institutions on account of Network activities, including the Grant.
- (j) **“Network Intellectual Property” or “Network IP”** means all Intellectual Property created in performance of the Network Research Projects.
- (k) **“Network Investigator”** means a person who:
- i. is employed or otherwise given academic status by an Institution and eligible to receive NSERC funds;
  - ii. is responsible for carrying out Network Research Projects with Network Funds; and,
  - iii. has signed the acknowledgement attached as Schedule 2.
- (l) **“Network Leader”** means an employee of the Lead Institution, or such other faculty member of an Institution designated by the Board and named in Schedule 6 as responsible for the general supervision of Network activities.
- (m) **“Network Manager”** means the administrative manager of the Network employed or engaged by the Lead Institution and named in Schedule 6.
- (n) **“Network Research Projects”** means research projects conducted by a Network Investigator to which the Board has allocated funding.
- (o) **“Research Program Committee”** means a committee approved by the Board, responsible for recommending the allocation of funding to Network Research Projects, the ongoing review of the progress of Network Research Projects, and such other duties as the Board may determine.
- (p) **“Term”** means the term of this Agreement as set out in Section 5.1.
- (q) **“The Technology Exploitation Committee” or “TEC”** means an ad-hoc committee that will be set up to assist in identifying and making recommendations with respect to strategic commercialization of Network Intellectual Property.

(r) **“Platform/Theme Leaders”** mean the individuals appointed by the Network Leader to assist with the scientific management of the Network.

1.2 **Number and Time.** The singular includes the plural and vice versa. All references to “days” are calendar days.

1.3 **Headings.** The division of this Agreement into articles, sections, clauses, paragraphs and the insertion of headings are for the convenience of reference only and shall not affect the construction or interpretation of this Agreement.

1.4 **Schedules.** The following schedules form part of this Agreement and are incorporated herein by reference:

Schedule 1	-	Sample Form of Confidentiality Agreement
Schedule 2	-	Network Investigator's Acknowledgement
Schedule 2A	-	University of Alberta Network Investigator's Acknowledgement
Schedule 3	-	The NSERC Strategic Network Proposal (Form 101) -NSERC COHESA Network, dated March 18, 2015
Schedule 4	-	Contributions from Industry Partners
Schedule 5	-	Requirements for the Public Announcement of NSERC Grants, Scholarships and Prizes
Schedule 6	-	Notices
Schedule 7	-	Background Intellectual Property (“BIP”)

## 2.0 ADMINISTRATION AND GOVERNANCE

2.1 **Obligations of Lead Institution.** The Lead Institution shall:

- (a) administer and, subject to the receipt of sufficient funds from NSERC, distribute the Grant in accordance with the terms and conditions of the Grant, the applicable policies and procedures of the Lead Institution and the directions of the Board;
- (b) provide accounting and financial reporting to the Network Manager and NSERC;
- (c) comply with all applicable statutes, laws, treaties, rules, codes, ordinances, regulations, permits, interpretations, certificates, judgments, decrees, injunctions, writs, orders, subpoenas, or like action of a governmental authority (“**Applicable Laws**”); and
- (d) in consultation with the Network Manager, generally coordinate all communications in respect of Network activities with NSERC.

**2.2 General Obligations.** Each Institution shall:

- (a) make a reasonable effort to collaborate with the other Institutions to perform Network activities as determined by the Board;
- (b) provide all of its Network Investigators with space and basic institutional support necessary to their Network research requirements;
- (c) ensure that all of its Network Investigators sign a Network Investigator's acknowledgement in the form attached as Schedule 2 to this Agreement or in the case of UofA in the form set out in Schedule 2A;
- (d) ensure that appropriate procedures and mechanisms are in place to promote compliance by its Network Investigators in obtaining appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of their Network Research Projects in accordance with NSERC's requirements;
- (e) comply with all applicable legislation with respect to the products of Network Research Projects and to evaluation of their environmental and human health impact;
- (f) abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp) until such time as the Lead Institution notifies the other Institutions that NSERC has received the final reports and comments from all collaborators and has closed the Grant account;
- (g) comply with all Applicable Laws; and
- (h) provide timely notice of and information about Network Intellectual Property disclosed to the Institution by its Network Investigators to the Network Manager and the Lead Institution.

**2.3 Financial Obligations.** Each Institution shall:

- (a) hold Network Funds in trust to be used exclusively for the purposes of Network Research Projects and other Network activities as outlined in collaboration agreements;
- (b) for a period of no less than seven (7) years from the date that the Network Funds are received by an Institution or from date of first transaction, depending on the Institution's policies, keep proper accounts, records and supporting documentation for all of the Institution's receipts and expenditures of Network Funds;
- (c) ensure that adequate financial controls consistent with NSERC's rules, regulations and guidelines and any rules established by the Board that do not contradict the Institution's or NSERC's policy are maintained with respect to Network Funds;
- (d) when requested by the Network Manager, provide financial reports for Network Funds received and administered by the Institution to the Network Manager and the Lead

Institution stipulated in collaboration agreements and notices of award issued to each Institution;

(e) subject to NSERC reporting guidelines, provide such other financial information and documentation as may be required by the Network Manager or the Lead Institution to administer Network activities and meet obligations to NSERC; and

(f) notify the Network Leader and the Lead Institution if any of the Institution's Network Investigators become ineligible to hold NSERC funding.

2.4 **Board.** The Board shall have overall responsibility for the management, direction and accountability of Network activities. The membership of the Board must reflect the interest and concerns of the public, private and academic sectors involved in the Network and shall consist of:

(a) at least a number of six (6) and no more than fifteen (15) voting members, which shall include the Network Leader, the Chair of the Research Program Committee, and representatives from the Industry Partners, the Institutions and the Network Investigators. At least one (1) Board member will be someone not directly affiliated with, employed by or a Party to the Network; and,

(b) such additional voting members as NSERC may appoint.

The Board's chair shall be chosen by the Board and shall be a voting member and, unless otherwise agreed by NSERC, shall not be a representative of any Institution receiving Network Funds. The Parties acknowledge that NSERC must approve the overall composition of the Board and must be advised of the membership of the Board and of any changes in membership during the term of the Grant. The responsible NSERC program officer is a non-voting member of the Board. The Network Manager is the non-voting secretary of the Board.

2.5 **Research Program Committee.** The Board shall approve the members of the Research Program Committee. The Research Program Committee shall be responsible for recommending the allocation of funding, including Network Funds, to Network Research Projects, the ongoing review of the progress of Network Research Projects, and such other duties as the Board may determine.

2.6 **Network Leader.** The Network Leader shall be a member of the Board and shall be responsible for providing scientific leadership and direction to the Network. Other duties may include: Network management; providing NSERC with scientific and financial reports approved by the Board; recruiting a Network Manager; promoting research collaboration among Network participants; acting on behalf of the Network participants with NSERC; and promoting the Network to the scientific community, the private and public sectors, and the general public.

2.7 **Equipment.** Equipment purchased with Network Funds shall be owned by the Institution making the purchase. During the Term, each Institution shall maintain such equipment in good repair and insured in accordance with its usual insurance coverage for similar equipment, and shall provide reasonable access to the equipment to other Network Investigators for the pursuit of Network Research Projects.

- 2.8 **Industry Partner Contributions:** All contributions to be made under this Agreement by the Industry Partners are included in Schedule 4: Contributions from Industry Partners, as modified and updated with the approval of the Board of Directors.

### 3.0 NETWORK INVESTIGATORS

- 3.1 **Network Investigators.** All Network Research Projects shall be conducted under the technical direction of a Network Investigator. Each Institution shall ensure that its respective Network Investigator shall:

- (a) abide by all applicable provisions of this Agreement, and any applicable collaboration agreement;
- (b) submit progress reports as specified by the Board;
- (c) provide timely notice of and information about Network Intellectual Property created by the Network Investigator to his or her Institution;
- (d) sign a Network Investigator's acknowledgement in the form attached as Schedule 2 to this Agreement or in the case of UofA, in the form attached as Schedule 2A;
- (e) ensure that all appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of their Network Research Projects are obtained in accordance with Institution's and NSERC's requirements;
- (f) abide by the provisions of NSERC's and the Institution's (whichever is more stringent) policies and guidelines with respect to conflict of interest and conflict of commitment;
- (g) comply with all applicable legislation in the performance of Network Research Projects and to evaluation of their environmental and human health impact;
- (h) abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp) until such time as the Lead Institution notifies the other Institutions that NSERC has received the final reports and comments from all collaborators and has closed the Grant account;
- (i) sit on Network committees and participate in other Network activities as agreed with the Board; and,
- (j) notify his or her Institution immediately if he or she becomes ineligible to hold NSERC funds.

- 3.2 **Default.** If the Board determines that a Network Investigator has failed to comply with the duties and responsibilities set out in this Agreement, it shall promptly notify the concerned Network Investigator and his or her Institution of the particulars in writing. The concerned Network Investigator shall have thirty (30) days within which to remedy the failure, failing which the Board may terminate his or her status as a Network Investigator and access to Network Funds. Notwithstanding such termination, the concerned Network Investigator shall cooperate to ensure an orderly transfer of responsibilities and

phase-out of activities and shall continue to be bound by the provisions of this Agreement, identified in Section 5.7. In this event, the concerned Network Investigator shall be entitled to receive payment for all financial expenses and uncancellable commitments made by he or she prior to the termination date, upon receipt of a detailed invoice. The concerned Network Investigator shall provide the other Parties with a report detailing all the results any Network Intellectual Property created up to the termination date.

## **4.0 INTELLECTUAL PROPERTY**

### **4.1 Background Intellectual Property.**

- (a) Each Network Investigator or a Party, as applicable, owns all right, title and interest in and to its Background Intellectual Property.
- (b) Unless expressly stated otherwise in writing, no licenses to a Party's Background Intellectual Property are granted by a Party to any one or more other Parties by this Agreement, whether by implication, estoppel or otherwise.

**4.2 Disclosure of Network Intellectual Property.** Each Institution shall disclose Network Intellectual Property to the chair of the Technology Exploitation Committee (TEC) within sixty (60) days of its receipt of a disclosure of Network Intellectual Property by a Network Investigator. The Network Leader will serve as the interim TEC chair until one is appointed by the Board of Directors.

### **4.3 Technology Exploitation Committee.**

- (a) Network Intellectual Property shall also be disclosed by the Network Leader to the Research Program Committee within sixty (60) days of its disclosure to the Network Leader.
- (b) The TEC will be created with designated contacts from each Party on an ad hoc basis whenever a disclosure of potentially commercializable Network IP is made to ensure the interests of the Network are upheld and the process of protecting Network Intellectual Property is transparent and accountable. The TEC will consist of a minimum of a representative from each Party with a stake in the Network Intellectual Property with expertise in technology transfer; the Network Leader; a member of the Board of Directors; the Network Investigator(s) responsible for the creation of the Network Intellectual Property and a Platform/Theme Leader. The TEC will be chaired by a Platform/Theme Leader not directly involved in the Network Intellectual Property. The Network Manager will attend all meetings of the TEC and will be responsible for record keeping. The TEC will be implemented to provide advice to the owners of Network IP relative to the protection and commercialization of Network IP. The Chair of the TEC will report to the Research Program Committee and Board. The Parties agree that the sole authority regarding decisions to protect and/or commercialize or otherwise dispose of Network Intellectual Property shall reside with the owner(s) of same.
- (c) Each Party shall provide the TEC, for information only, a confidential copy of any patent application for Network Intellectual Property within 60 days' of filing the application.



#### 4.4 **Ownership of Network Intellectual Property.**

- (a) In the case where Network Intellectual Property is solely created by a Network Investigator employed by an Institution, the Network Intellectual Property shall be owned and/or managed in accordance with the policies and procedures and employment agreements as applicable of the Institution where the Network Intellectual Property is created.
- (b) In the case where the Network Intellectual Property is solely created by an Industry Partner, the Industry Partner shall own such Network Intellectual Property.
- (c) In the case where Network Intellectual Property is jointly created by Network Investigators employed by one or more Institutions, and/or one or more Industry Partner, the Network Investigators and Industry Partner shall jointly own such Network Intellectual Property, with the distribution agreed among the co-inventors on the basis of the inventive contribution of each inventor to the said Network IP. The per Institution distributions between the Institution and the Inventors belonging to that Institution will apply to the portion assigned to the specific inventors.
- (d) The determination of whether the personnel of an Institution or an Industry Partner has created, contributed to, invented or otherwise developed the Network Intellectual Property solely or jointly will be based on (i) inventorship as determined under patent laws, in the case of patentable subject matter, and (ii) whether a Party made a significant creative contribution to the development of a work of authorship, or other subject matter that is not patentable subject matter.

[Sections 4.5 and 4.6 intentionally omitted]

#### 4.7 **Protection of Network Intellectual Property.**

- (a) Any sole owner of Network Intellectual Property shall have the sole authority for making decisions related to patenting and commercializing the solely owned Network Intellectual Property but is not obliged by this Agreement to obtain patent protection of it.
- (b) Parties that are joint owners of Network IP may obtain patent protection for the jointly owned Network IP. Where there are two or more owners of the Network IP, they shall designate one of the Network Partners co owning the Network IP as a lead Party to act on their behalf. Joint owners shall negotiate the costs for patent application and maintenance in respect of the jointly owned Network IP.
- (c) A joint owner that is unwilling to obtain and maintain patent protection for jointly owned Network IP must diligently and effectively proceed with patent protection if:
  - i. the other joint owner(s) undertake(s) to bear all out-of-pocket expenses incurred in obtaining and maintaining the patent, or
  - ii. if any other Party (non-joint owner) undertakes to pay the unwilling joint owner's share of all out-of-pocket expenses incurred in obtaining and maintaining the patent.

#### 4.8 **Licensing Network Intellectual Property.**

- a) The Parties shall be granted a royalty free, non-exclusive, non-commercial, non-transferable licence to use all Network IP for internal research and educational purposes. Such licence shall not include the right to sublicense any such Network IP, or create any modifications or derivative thereof, in any commercial product or service.
- b) Subject to third parties rights', all Network IP shall be entered into a database within (60) days of disclosure to the Network Leader. A Party interested in obtaining a commercial licence to Network IP, shall do so under licensing agreement(s) separate from this Agreement, at the discretion of the IP owner(s), which includes a commercially reasonable royalty rate and is negotiated strictly between the IP owner(s) and the Party interesting in obtaining the licence. Notwithstanding the above, all Parties will maintain a non-exclusive and non-commercial licence as per 4.8 a).
- c) Joint owners shall manage commercialization activities in respect of jointly owned Network Intellectual Property as per the terms of an inventions management agreement to be negotiated between the joint owners in good faith. Responsibility for negotiating licences for jointly owned Network Intellectual Property shall lie with the joint owners, under licensing agreement(s) separate from this Agreement.
- d) Notwithstanding the above, all Institutions and their researchers retain the right to use the knowledge or Network IP generated, for non-commercial purposes in future research and teaching.
- e) Every Party understands and agrees that the decision regarding negotiating and executing an exclusive or non-exclusive commercial licence rests solely with the IP-owning Institution(s) based on the Institution's IP policy, on terms to be agreed under separate licensing agreement(s).

4.9 **Assignment.** If an Institution assigns its interest in Network Intellectual Property pursuant to the Institution's applicable policies, procedures and agreements with its personnel, such assignment shall be subject to the provisions of this Agreement.

#### 4.10 **Confidential Information.**

- (a) The Parties may disclose Confidential Information to one another to facilitate performance of this Agreement and research hereunder under separate confidentiality agreements between the applicable Parties. As used in this Agreement, "Confidential Information" has the meaning set forth in the applicable separate confidentiality agreements between the applicable Parties or, if such a separate confidentiality agreement does not apply, then the definition set forth in Section 1.1(c) will apply. The Parties agree that they will only disclose such Confidential Information to another Party as is required to fulfill the terms of the Grant or as otherwise contemplated by their separate confidentiality agreement, and that this Section 4.10 will not be deemed to supersede or modify the terms of any separate confidentiality agreement between the applicable Parties. A suggested form of agreement (any separate confidentiality agreement between applicable Parties, a "Confidentiality Agreement") is appended as **Schedule 1** to this Agreement.

- (b) The Parties agree that a Disclosing Party's Confidential Information will not be disclosed by the Receiving Party to any third party and will be treated by the Receiving Party with the same degree of care with which the Receiving Party treats and protects its own proprietary and confidential information against public disclosure but with no less than reasonable care.
- (c) Nothing in this Agreement shall obligate a Party to disclose to the other Parties any particular information.
- (d) Confidential Information received by the Receiving Party remains the property of the Disclosing Party and shall be used only for the purposes of a Network Research Project or as otherwise authorized by the applicable Confidentiality Agreement.
- (e) **Right to Disclose Risks.** Notwithstanding the provisions of Section 4.10 (a), the Institutions may have the legal obligation to publicly disclose information about immediate or near-term risks to research participants or the general public, or immediate or near-term threats to the public interest that become known in the course of, or after the Term of the Grant. Provided there is a demonstrated legal obligation, this information will be disclosed to the Party whose Confidential Information is being disclosed, and/or any pertinent regulator prior to the public disclosure ("**Right to Disclose Risks**"). Notwithstanding anything in this Section, the Institutions shall use reasonable efforts to not disclose a Party's Confidential Information as part of its Right to Disclose Risks.
- (f) Notwithstanding the provisions of Section 4.10 (a), the Parties acknowledge that the Institutions are educational institutions to which Canadian and/or Provincial access to information legislation ("**Access to Information Legislation**") applies and agree to cooperate with the Institutions from time to time with respect to the Institution's compliance with Access to Information Legislation. In the event of a request pursuant to Access to Information Legislation to an Institution, prior to disclosure of any Confidential Information, the Institution shall notify the Party whose Confidential Information could be subject to such a request and provide such Party an opportunity to object to the disclosure of such Party's Confidential Information as provided for under the relevant Access to Information Legislation. Notwithstanding anything in this Section, the Institutions shall use reasonable efforts to not disclose a Party's Confidential Information as part of an Access to Information Legislation request.

#### 4.11 **Public Disclosure of Research Results.**

- (a) Subject to 7.1, the Institutions or Network Investigators may publish or otherwise publicly disclose their research results arising from the performance of Network Research Projects in accordance with this Section 4.11 and the provisions of any applicable Confidentiality Agreement and will acknowledge the support of the Network, NSERC and the Industry Partners in all such publications. The Institutions agree that any disclosure, press release or publicity will fairly represent the contribution of each Party to the Project as well as that of the Network Investigators and other members of the research team, as appropriate. A Network Investigator who publishes or otherwise publicly discloses research results arising from its Network Research Project (in this Section 4.11 (b), an "**Author**") shall mention all publications or disclosures in the annual progress reports to the best of his or her knowledge.

(b) Where the Network Research Project is conducted jointly with a Party or Parties or is otherwise subject to a Confidentiality Agreement with a Party, it will be Author's responsibility to promptly provide a copy of the proposed publication to the other Party or Parties involved. All Parties will treat the publication as Confidential Information until it is submitted for publication. If requested by a Party within thirty (30) days of the Party's receipt of the publication:

- i. the Authors shall remove any Confidential Information provided by the Party from the publication prior to its release; and,
- ii. if a Party wishes to file for patent protection for any Intellectual Property that would be publicly disclosed in the publication, the Authors shall delay public disclosure of the publication for up to sixty (60) days to facilitate the filing of a patent application.

(c) **Theses.**

- i. Except to the extent that the provisions of Section 4.11(b) and any Confidentiality Agreement apply, and subject to Section 4.11 (c) there shall be no restrictions on the content (except with respect to any obligations with respect to information obtained pursuant to a Confidentiality Agreement) or handling, for academic purposes, of the thesis. The Parties agree there shall be no delay in the defense of a student's thesis or in a student's graduation.
- ii. Each Institution hereby acknowledges that no Industry Partner's Confidential Information may be published in a thesis without authorization of the Industry Party and compliance with the requirements of Section 4.11 (b). Therefore, to eliminate the possibilities (a) that the submission or evaluation of a thesis may be prevented or delayed, or (b) that material essential or comprising a significant portion of a student's work be required to be removed from or modified in a thesis, the Institutions shall direct its professors and students to ensure that no Industry Partner's Confidential Information is included in a thesis. An Institution and an Industry Partner may arrange in advance of the preparation of a thesis that the Industry Partner's Confidential Information be included but presented in a manner which protects the commercial value of such information, through normalisation of results or other means acceptable to both the Institution and Industry Partner.
- iii. Where a Party has requested a delay pursuant to Section 4.11 (b) (ii) above, said Party shall cooperate with the Author and the applicable Institution in order to protect any such patentable Intellectual Property and remove any such Disclosing Party's Confidential Information within the remaining thirty (30) days of said sixty (60) days period.
- iv. If allowed by the Institution's policies, the Author may arrange for any thesis that includes or discusses Network Intellectual Property for which the Party intends to seek protection to be submitted and examined in confidence, and ensure that any examiner not already covered by a suitable obligation of confidentiality sign a confidentiality and non-use agreement for that purpose.

## 5.0 TERM AND TERMINATION

- 5.1 **Term.** The Term of this Agreement begins on the Effective Date and ends on August 31, 2021.
- 5.2 **Termination by Lead Institution or unanimously by all Parties.** This Agreement may be terminated on sixty (60) days written notice by the Lead Institution to the other Parties, or otherwise only by mutual written agreement of all Parties.
- 5.3 **Withdrawal by a Party.** Each Party shall have the right to withdraw from the Network and its participation in this Agreement by giving ninety (90) days prior written notice thereof to the other Parties (the "**Termination Notice**"). Such Party's participation in this Agreement shall be terminated at the end of the Termination Notice (the "**Effective Date of Termination**"). Nothing in this Agreement shall rescind the obligations that may have accrued or the rights and privileges of that Party up to the Effective Date of Termination. Termination by one Party shall not affect the validity or enforceability of this Agreement by the remaining Parties. A Party withdrawing under this Section 5.3 shall:
- (a) provide a financial report to Lead Institution accounting for its Network Research Projects expenditures up to the date specified in the Termination Notice, and return to Lead Institution any unspent balances net of costs as of the Effective Date of Termination; and
  - (b) provide a full and complete report on all aspects of its research up to the Effective Date of Termination to the Network Leader.
- 5.4 **Material Breach.** If a Party is in material breach of this Agreement ("**Breaching Party**"), any of the remaining Party's ("**Non-Breaching Party**") may deliver notice of such breach to the Breaching Party. In such notice the Non-Breaching Part(ies) shall identify the actions or conduct that it would consider to be an acceptable cure of such breach. If the Breaching Party fails to cure such breach within the one hundred and twenty (120) day period, the Non-Breaching Party may terminate the Breaching Party from this Agreement upon written notice.
- 5.5 **Grant Instalments.** NSERC second and subsequent Grant instalments will be released on or about the annual anniversary of the Effective Date subject to:
- (a) the availability of funds;
  - (b) confirmation that the Industrial Partner(s) have met their obligations in providing cash and in-kind support;
  - (c) confirmation of continued financial support by the Industrial Partner(s) for the following year;
  - (d) satisfactory review of progress; and
  - (e) demonstrated need for funds.
- 5.6 **Grant Termination.** The Parties acknowledge that NSERC may terminate the Grant at any time if:
- (a) NSERC finds progress to be unsatisfactory;

- (b) the support of the participating organizations fails substantially or is withdrawn entirely and a suitable replacement cannot be found;
- (c) failure to comply with all applicable rules, regulations, terms and conditions of NSERC;
- (d) the Network Leader becomes ineligible to hold NSERC funding and a suitable replacement cannot be identified.

5.7 If NSERC terminates the Grant, the Lead Institution, in collaboration with the other Parties and NSERC, will negotiate the amendment or termination of this Agreement, as applicable, to ensure minimal disruption

5.8 **Survival.** The following provisions will survive termination or expiration of this Agreement in accordance with their terms: 2.2 (e), 2.2 (f), 2.2 (h), 2.3(b), 2.3(d), 2.3(e), 2.7, 3.1(c), 4.1-4.8, 4.10, 5.0, 6.0 and 7.0, together with any other provisions of Section 1.0 necessary to interpret or implement such provisions.

## 6.0 LIMITATION OF LIABILITY AND INSURANCE

- 6.1 **Limitation of Liability.** Unless otherwise agreed to by the Parties in writing, each Party assumes its own liability for any costs, suits or claims on account of injuries (including death) to persons participating in Network activities and no Party or its directors, officers, employees, appointees, students, trainees and agents (the "First Party") shall be liable to any other Party (the "Second Party") for any costs, suits or claims made by the Second Party or made against the Second Party except to the extent caused by gross negligence or wilful misconduct on the part of the First Party.
- 6.2 **No indirect losses.** Unless otherwise agreed to by the Parties in writing, and notwithstanding Section 6.1 or any other term or condition of this Agreement to the contrary, in no event shall any Party (in this Section 6.2, the "First Party") be liable to any other Party for loss of business, profit, revenue or anticipated savings of another Party or for any indirect, special or consequential loss or damage of another Party based on or arising from or in relation to this Agreement or the matters or activities dealt with herein, regardless whether such indirect loss or damage arises under contract, tort, or is based upon strict liability or other theory of law or equity, and regardless of whether the First Party was advised of the possibility of such loss or damage.
- 6.3 **Force majeure.** However, in no event shall any Party be in default under this Agreement for any delay or failure to perform hereunder due to causes beyond its reasonable control and without its fault or negligence, including but not limited to acts of nature, acts of any government (for clarity, excluding a Party to this Agreement) in its sovereign or contractual capacity, strikes, fires, floods, terrorism, riots or embargoes.
- 6.4 **Disclaimer.** Except as otherwise agreed to by the Parties in writing, no Party makes any representation or warranty regarding the usefulness, accuracy or sufficiency of any Confidential Information, results, reports or of any Intellectual Property made available to another party under this Agreement. There are no warranties, whether written or oral, express, implied or statutory including, without limitation, the implied warranties, terms or conditions of merchantability and fitness for any particular purpose, all of which are hereby expressly disclaimed, even if a Party has been made aware of such purpose, or warranties against infringement of intellectual property rights of third parties and even if a Party has been advised of any such infringement.

6.5 **Insurance.** Each Party shall, at its own cost and expense, obtain and maintain insurance (including self-insurance) adequate to cover its activities under this Agreement and any Network Research Projects in which such Party will be collaborating.

## 7.0 GENERAL

- 1.1 **Use of Names and Publicity.** No Party will use the name, trade or service marks, logos or other symbol representative of another Party, owned by or licensed to another Party, or of any member of another Party's personnel, without the prior written approval of the authorized representative of the applicable Party or as otherwise permitted by law (e.g. referential use). However, all Parties may make the subject matter of this Agreement a matter of public record. During the term of the Grant, all Network public relations communications must be consistent with Requirements for the Public Announcement of NSERC Grants, Scholarships and Prizes set out in the attached Schedule 5.
- 7.2 **Notices.** Notices under this Agreement will be sent to the Parties as set out in the attached Schedule 6, or to such other person as a Party may subsequently advise in writing to the other Parties.
- 7.3 **No Agency.** The Parties are independent parties and nothing in this Agreement constitutes any Party as the employer, principal or partner of or joint venture with another Party. No Party has the authority to assume or create any obligation or liability, either express or implied, on behalf of another.
- 7.4 **Governing Law.** This Agreement will be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.
- 7.5 **Entire Agreement.** This Agreement, including its attached schedules, is the entire agreement among the Parties on the subject matter hereof and supersedes all prior discussions, agreements and writings in respect hereto. Where the terms in Section 4.10 (Confidential Information) and Section 6.1 (Limitation of Liability) in this Agreement are in conflict with the confidentiality and limitation of liability sections in a duly executed Material Transfer Agreement ("MTA") or Confidentiality Agreement that applies to a Network Research Project, the terms of such MTA or Confidentiality Agreement will prevail in reference to that Network Research Project only and as regards only those Parties to such Network Research Project. All other terms of this Agreement will prevail in the event of any other conflicts in a duly executed MTA or Confidentiality Agreement and this Agreement. The Lead Institution may supplement or otherwise amend Schedule 6 upon written notice to the other Institutions. Except as otherwise permitted by this Agreement, no modification of this Agreement will bind the Parties unless it is in writing and signed by all Parties.
- 7.6 **Amendments.** The Lead Institution may supplement or otherwise amend Schedule 6 upon written notice to the other Institutions. Except as otherwise permitted by this Agreement, no modification of this Agreement will bind the Parties unless it is in writing and signed by all Parties.
- 7.7 **Severability.** The provisions of this Agreement are severable and if any one or more such provisions shall be determined to be invalid, illegal or unenforceable, in whole or in part, the validity, legality and enforceability of any of the remaining provisions or portions thereof shall not in any way be affected or impaired thereby and shall nevertheless be binding between the Parties. Any such invalid, illegal or unenforceable provision or portion thereof shall be changed and interpreted so as best to accomplish the objectives of such provision or portion thereof within the limits of applicable law or applicable court decisions.

- 7.8 **No Assignment.** Except as otherwise permitted by this Agreement, no Party may sell, assign, encumber, licence or otherwise transfer any of its rights, duties or obligations under this Agreement without the prior written consent of the other Parties, which consent may not be unreasonably withheld. The Parties acknowledge that the Lead Institution may assign its rights and obligations herein to any successor Lead Institution without the consent of the other Parties.
- 7.9 **Counterparts.** This Agreement may be executed in two or more counterparts, each of which together shall be deemed an original, but all of which together shall constitute one and the same instrument. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the Party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or “.pdf” signature page were an original
- 7.10 **Successors.** This Agreement will bind and inure to the benefit of the Parties and their respective heirs, successors and assigns.
- 7.11 **New Parties.** New parties, as approved by the Board, may be added to this Agreement after the original Parties have signed, by acceding to this Agreement through an agreement signed by the new party and the Lead Institution. If a new party is added, the Lead Institution shall notify the Parties and provide a copy of the new party’s signature to this Agreement and an amended **Schedule 4** and **Schedule 6**.

[signature page follows; remainder of this page intentionally left blank]



IN WITNESS WHEREOF, by signature of their authorised officers below, the Parties agree to be bound by the terms of this Agreement.


THE GOVERNING COUNCIL  THE UNIVERSITY OF TORONTO  


Name: Derek Newton Ph.D

Title: Assistant Vice-President, Innovation, Partnerships and Entrepreneurship

Date: *Oct. 23/18*

*Acknowledged by:*

  
Name: Prof. Andreas Moshovos

Title: Network Leader

Date:

UNIVERSITÉ DE MONTRÉAL



Name: Daniel Lajeu  
Title: Executive Di

Date: 15 Octobre 2018

**CORPORATION DE L'ÉCOLE POLYTECHNIQUE DE MONTRÉAL**

Name: [REDACTED] Bertrand, Eng., Ph.D.

Title: [REDACTED] Head of Research, Innovation and International Affairs

Date:

THE UNIVERSITY OF BRITISH COLUMBIA



Mario Kasapi

2018.10.11 15:16:57 -07'00'



Name: Mario Kasapi, PhD

Title: Associate Director, Sponsored Research



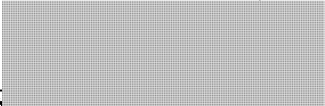
Date:

**SIMON FRASER UNIVERSITY**

  
Name: A  Takacs-Cox  
Title: Director, Research Services

Date: **OCT 16 2018**

THE GOVERNORS OF THE UNIVERSITY OF ALBERTA

  
Name: Dr. ~~Walter Dixon~~ ~~PIBITHHS KUM~~  
Title: ~~Interim~~-Vice-President (Research)

Date: *October 23, 2018*


THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/MCGILL UNIVERSITY

Name: [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]  
Title: Vice Principal Research and Innovation



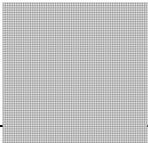
Date: Oct 15/18

UNIVERSITY OF VICTORIA

  
Name: **Rachael Scarth**  
Title: **AVP Research Operations**  
**University of Victoria**  
Date: **OCT 16 2018**



**INTEL**



---

Name: Dr. Andrew Ling  
Title: Engineering Manager

Date: October 17, 2018

ADVA

ES

*2018*  
*10-11-18*

Name: Andrej Zdra  
Title: CVP, Software Development

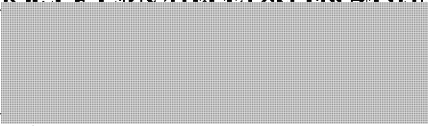
Date: October 12, 2018

**HUAWEI TECHNOLOGIES CANADA CO., LTD.**

\_\_\_\_\_  
Name: [REDACTED]  
Title: President, R&D

Date: August 2, 2018

GOOGLE CANADA CORPORATION



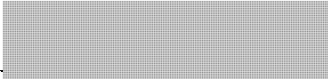
Name:

Title: Robert Andreatta

Date: Authorized Signatory  
October 25, 2018



QUALCOMM CANADA INC.

  
Name: Milivoje (Mickey) Aleksic  
Title: VP & Site Lead  
Date:

## SCHEDULE 1

### Sample Form of Confidentiality Agreement

This Agreement ("Confidentiality Agreement") is made effective the last date of signature below (the "Effective Date") between:

<INSERT>

- and -

<INSERT>

The Parties are participating in research under the NSERC COHESA: Computing Hardware for Emerging Sensory Applications (the "Network") pursuant to the terms of a network agreement (the "Network Agreement") and wish to exchange certain information to facilitate the performance of Network activities. Therefore, the Parties agree as follows:

- I. **Definitions.** The following capitalized terms have the following meanings in this Agreement:
- (a) **"Confidential Information"** means any information, technical data or know-how in whatever form, including, but not limited to, descriptions, drawings, compositions, business and financial information, computer software, documented information, machine readable or interpreted information, information contained in physical components, mask works and artwork disclosed by a Party (the "**Disclosing Party**") to another Party (the "**Receiving Party**"), which are clearly identified as being confidential or proprietary. Information transmitted orally or visually shall be considered to be Confidential Information only if such Confidential Information is identified by the disclosing party before disclosure, reduced to written summary form, marked as being confidential or proprietary by the disclosing party, and provided to the recipient within thirty (30) days if requested by the receiving party after such oral or visual transmission. Confidential Information does not include information which can be shown by documentary evidence was:
- i. developed by the recipient independently of the Disclosing Party's Confidential Information as supported by the recipient's written records;
  - ii. rightfully obtained without restriction by the Receiving Party from a third party;
  - iii. publicly available other than through the fault or negligence of the Receiving Party;
  - iv. released without restriction by the Disclosing Party to anyone as supported the Receiving Party's written records;
  - v. known to the recipient at the time of its disclosure, without an existing duty to protect the information; or
  - vi. required to be disclosed by law.

- (b) **“Purpose”** means [the performance of Network research activities, including the research project entitled <INSERT> / the evaluation of an invention entitled <INSERT> as outlined in an invention disclosure dated <DATE> / etc.].

2. **Exchange of Confidential Information.**

- (a) The Parties may disclose Confidential Information one to another under this Confidentiality Agreement. Confidential Information shall remain the property of the Disclosing Party. The Receiving Party will use the other Party's Confidential Information solely for the Purpose outlined above, and shall disclose such Confidential Information only to its personnel, affiliates, employees of its affiliates, contractors and students having a “need to know” who have either signed an agreement making such persons subject to the provisions of this Agreement or are bound by similar obligations by way of some other formal process.
- (b) Both Parties to this Confidentiality Agreement shall protect all such Confidential Information using the same degree of care that the Receiving Party uses with respect to its own proprietary information, but in no event with safeguards less than a reasonably prudent business would exercise under similar circumstances.

3. **Impermissible Uses.** Unless otherwise agreed, the Receiving Party shall not use or disclose the Disclosing Party's Confidential Information, for any purpose, including but not limited to:

- (a) manufacture or enabling manufacture by itself or any third party of the Disclosing Party's products, products similar thereto, or products derived there from, without the prior express written consent of the other;
- (b) decompile, disassemble, decode, reproduce, redesign, reverse engineer or manufacture any products or equipment of the Disclosing Party or any part thereof;
- (c) perform any services, including services relating to the products or equipment of the Disclosing Party; or,
- (d) deliver under a contract or make subject to a “rights in data” clause or equivalent clause.

4. **Return or Destruction.** Upon written request of the Disclosing Party, submitted no later than one hundred and eighty (180) days after the termination of this Confidentiality Agreement, the disclosed Confidential Information and all copies thereof (except one copy which may be retained for archival purposes and to verify compliance with this Confidentiality Agreement) shall be returned to the Disclosing Party, be destroyed or made unusable and a written certificate of such actions shall be provided to the Disclosing Party.

5. **Legal Actions and Government Regulations.** If the Receiving Party is faced with legal action or a request under Canadian or foreign government regulations to disclose Confidential Information received hereunder, the Receiving Party shall promptly notify the Disclosing Party, and at the request and expense of the Disclosing Party, the Receiving Party shall cooperate in contesting such disclosure. Except in connection with a failure to discharge the responsibilities set forth in the preceding sentence, neither party shall be liable in any way for any disclosures made pursuant to judicial action or Canadian or foreign government regulations.

6. **Remedies.** Any Party shall be entitled to seek an injunction and/or specific performance upon application to a court to prevent a breach of the covenants and provisions of one of the other Parties herein and that such right shall be cumulative and in addition to any other remedies which may be available to the claiming Party.
7. **Term.** This Confidentiality Agreement will enter into force as of the Effective Date and will terminate five (5) years from the Effective Date of this Agreement.
8. **Conflict of Terms.** Where the terms in Section 4.10 (Confidential Information) and Section 6.1 (Limitation of Liability) of the Network Agreement are in conflict with the confidentiality and limitation of liability sections in this Agreement, the terms of this Confidentiality Agreement will prevail in reference to the subject matter of this Confidentiality Agreement only. All other terms of the Network Agreement will prevail in the event of any other conflicts in this Agreement and the Network Agreement.

<INSERT>

\_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

<INSERT>

\_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_



## SCHEDULE 2

### Network Investigator's Acknowledgement

I, \_\_\_\_\_, am a Network Investigator involved in the **NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS** (the "Network") established under a Network Agreement (the "Network Agreement") among the participating institutions and Industry Partners. I acknowledge that I participate as an employee of Polytechnique Montreal \_\_\_\_\_ (my "Institution") and that my signature to this document indicates that I understand the terms of my activities in connection with the Network.

In particular, I acknowledge and agree that as a Network Investigator, I will:

1. Use Network funds only to further the goals of the Network as approved by the Board of Directors.
2. Give credit to the Network, NSERC, Industry Partners, government departments/agencies and collaborating researchers, in publications and publicity relating to my Network research. My public relations communications relating to Network activities will be consistent with NSERC's *General Guidelines for the Public Announcement of Major NSERC Awards*.
3. Obtain appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of Network research in accordance the requirements of my Institution and NSERC.
4. Abide by my Institutions or NSERC's, whichever is more stringent, policies and guidelines with respect to conflict of interest and conflict of commitment.
5. If applicable, comply with all applicable legislation with respect to the products of my Network research and to evaluation of their environmental and human health impact.
6. Abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out at < [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp)>.
7. Use Network funds as agreed to in the network proposal and approved by the Board of Directors.
8. Advise my Institution if I become ineligible to hold NSERC funding.
9. Abide by the provisions of the Network Agreement with respect to intellectual property and the public disclosure of research results. I will disclose all Network Intellectual Property (as defined in the Network Agreement) to my Institution's technology transfer office in a timely manner. I will inform all participants in my Network research, whether or not paid from Network funds, of all of the foregoing obligations.
10. Prepare timely research progress reports for submission to the Network Board and/or Project Leader as and when requested.

## SCHEDULE 2

### Network Investigator's Acknowledgement

1. [REDACTED] am a Network Investigator involved in the NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS (the "Network") established under a Network Agreement (the "Network Agreement") among the participating institutions and Industry Partners. I acknowledge that I participate as an employee of *The University of British Columbia* (my "Institution") and that my signature to this document indicates that I understand the terms of my activities in connection with the Network.

In particular, I acknowledge and agree that as a Network Investigator, I will:

1. Use Network funds only to further the goals of the Network as approved by the Board of Directors.
2. Give credit to the Network, NSERC, Industry Partners, government departments/agencies and collaborating researchers, in publications and publicity relating to my Network research. My public relations communications relating to Network activities will be consistent with NSERC's *General Guidelines for the Public Announcement of Major NSERC Awards*.
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4. Abide by my Institutions or NSERC's, whichever is more stringent, policies and guidelines with respect to conflict of interest and conflict of commitment.
5. If applicable, comply with all applicable legislation with respect to the products of my Network research and to evaluation of their environmental and human health impact.
6. Abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out at <[http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp)>.
7. Use Network funds as agreed to in the network proposal and approved by the Board of Directors.
8. Advise my Institution if I become ineligible to hold NSERC funding.
9. Abide by the provisions of the Network Agreement with respect to intellectual property and the public disclosure of research results. I will disclose all Network Intellectual Property (as defined in the Network Agreement) to my Institution's technology transfer office in a timely manner. I will inform all participants in my Network research, whether or not paid from Network funds, of all of the foregoing obligations.
10. Prepare timely research progress reports for submission to the Network Board and/or Project Leader as and when requested.

## SCHEDULE 2

### Network Investigator's Acknowledgement

I, \_\_\_\_\_, am a Network Investigator involved in the **NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS** (the "Network") established under a Network Agreement (the "Network Agreement") among the participating institutions and Industry Partners. I acknowledge that I participate as an employee of Université de Montréal (my "Institution") and that my signature to this document indicates that I understand the terms of my activities in connection with the Network.

In particular, I acknowledge and agree that as a Network Investigator, I will:

1. Use Network funds only to further the goals of the Network as approved by the Board of Directors.
2. Give credit to the Network, NSERC, Industry Partners, government departments/agencies and collaborating researchers, in publications and publicity relating to my Network research. My public relations communications relating to Network activities will be consistent with NSERC's *General Guidelines for the Public Announcement of Major NSERC Awards*.
3. Obtain appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of Network research in accordance the requirements of my Institution and NSERC.
4. Abide by my Institutions or NSERC's, whichever is more stringent, policies and guidelines with respect to conflict of interest and conflict of commitment.
5. If applicable, comply with all applicable legislation with respect to the products of my Network research and to evaluation of their environmental and human health impact.
6. Abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out at < [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp)>.
7. Use Network funds as agreed to in the network proposal and approved by the Board of Directors.
8. Advise my Institution if I become ineligible to hold NSERC funding.
9. Abide by the provisions of the Network Agreement with respect to intellectual property and the public disclosure of research results. I will disclose all Network Intellectual Property (as defined in the Network Agreement) to my Institution's technology transfer office in a timely manner. I will inform all participants in my Network research, whether or not paid from Network funds, of all of the foregoing obligations.
10. Prepare timely research progress reports for submission to the Network Board and/or Project Leader as and when requested.

## SCHEDULE 2

Network Investigator's Acknowledgement

I, [REDACTED], am a Network Investigator involved in the NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS (the "Network") established under a Network Agreement (the "Network Agreement") among the participating institutions and Industry Partners. I acknowledge that I participate as an employee of University of Victoria (my "Institution") and that my signature to this document indicates that I understand the terms of my activities in connection with the Network.

In particular, I acknowledge and agree that as a Network Investigator, I will:

1. Use Network funds only to further the goals of the Network as approved by the Board of Directors.
2. Give credit to the Network, NSERC, Industry Partners, government departments/agencies and collaborating researchers, in publications and publicity relating to my Network research. My public relations communications relating to Network activities will be consistent with NSERC's *General Guidelines for the Public Announcement of Major NSERC Awards*.
3. Obtain appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of Network research in accordance with the requirements of my Institution and NSERC.
4. Abide by my Institution's or NSERC's, whichever is more stringent, policies and guidelines with respect to conflict of interest and conflict of commitment.
5. If applicable, comply with all applicable legislation with respect to the products of my Network research and to evaluation of their environmental and human health impact.
6. Abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out at < [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp) >.
7. Use Network funds as agreed to in the network proposal and approved by the Board of Directors.
8. Advise my Institution if I become ineligible to hold NSERC funding.
9. Abide by the provisions of the Network Agreement with respect to intellectual property and the public disclosure of research results. I will disclose all Network Intellectual Property (as defined in the Network Agreement) to my Institution's technology transfer office in a timely manner. I will inform all participants in my Network research, whether or not paid from Network funds, of all of the foregoing obligations.
10. Prepare timely research progress reports for submission to the Network Board and/or Project Leader as and when requested.


11. Make reasonable efforts to attend along with my students who are supported by Network funds or involved in my Network research, any annual Network scientific meetings and/or workshops.
12. Notify research participants working on the Grant of the terms and conditions of the Network Agreement.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

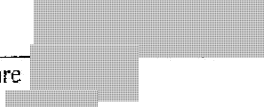
Oct 17, 2018

11. Make reasonable efforts to attend along with my students who are supported by Network funds or involved in my Network research, any annual Network scientific meetings and/or workshops.
12. Notify research participants working on the Grant of the terms and conditions of the Network Agreement.

  
\_\_\_\_\_  
Signature

Oct 11, 2018  
\_\_\_\_\_  
Date

11. Make reasonable efforts to attend along with my students who are supported by Network funds or involved in my Network research, any annual Network scientific meetings and/or workshops.
12. Notify research participants working on the Grant of the terms and conditions of the Network Agreement.

\_\_\_\_\_  
Signature 

\_\_\_\_\_  
Date Oct. Feb. 18, 2018

11. Make reasonable efforts to attend along with my students who are supported by Network funds or involved in my Network research, any annual Network scientific meetings and/or workshops.
12. Notify research participants working on the Grant of the terms and conditions of the Network Agreement.



Signature Wed. Oct. 17, 201

Date



## SCHEDULE 2A

### University of Alberta Network Investigator's Acknowledgement

I, \_\_\_\_\_, am a Network Investigator involved in the NSERC COMPUTING HARDWARE FOR EMERGING INTELLIGENT SENSORY APPLICATIONS (the "Network") established under a Network Agreement (the "Network Agreement") among the participating institutions. I acknowledge to the Governors of the University of Alberta (my "Institution") that I participate as an employee of the University of Alberta and that my signature to this document indicates that I have read and understand the terms and conditions of my activities in connection with the Network.

In particular, I acknowledge and acknowledge to my Institution as a Network Investigator, I will:

1. Use Network funds only to further the goals of the Network as approved by the Board of Directors.
2. Give credit to the Network, NSERC, Industry Partners, government departments/agencies and collaborating researchers, in publications and publicity relating to my Network research. My public relations communications relating to Network activities will be consistent with NSERC's *General Guidelines for the Public Announcement of Major NSERC Awards*.
3. Obtain appropriate certification and/or approval regarding the use of humans, animals and/or biohazards in the conduct of Network research in accordance the requirements of my Institution and NSERC.
4. Abide by my Institutions or NSERC's, whichever is more stringent, policies and guidelines with respect to conflict of interest and conflict of commitment.
5. If applicable, comply with all applicable legislation with respect to the products of my Network research and to evaluation of their environmental and human health impact.
6. Abide by all applicable rules, regulations, terms and conditions of NSERC, including those set out at < [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/index_eng.asp)>.
7. Advise my Institution if I become ineligible to hold NSERC funding.
8. Abide by the provisions of the Network Agreement with respect to intellectual property and the public disclosure of research results. I will disclose all Network Intellectual Property (as defined in the Network Agreement) to my Institution's technology transfer office in a timely manner. I will inform all participants in my Network research, whether or not paid from Network funds, of all of the foregoing obligations.
9. Prepare timely research progress reports for submission to the Network Board and/or Project Leader as and when requested.

- 10. Make reasonable efforts to attend along with my students who are supported by Network Funds or involved in my Network Research Projects, any annual Network scientific meetings and/or workshops.
- 11. To notify research participants working on my Network Research Projects of the terms and conditions of the Agreement.

\_\_\_\_\_  
Signature



20 Oct 10, 2018

Date

**SCHEDULE 3**

**NSERC STRATEGIC NETWORK PROPOSAL FOR:**  
**NSERC COHESA NETWORK (March 18, 2015)**

(See attached)

## SCHEDULE 4

### Contributions from Industry Partners

Lead Institution shall submit an invoice to the Industry Partner(s) for any cash contribution described in this Schedule, annually on the anniversary of the Effective Date or any other dates as agreed to by the Lead Institution and such Industry Partner in writing. For certainty, no Industry Partner shall be in breach of its payment obligations under this Schedule 4 if the Lead Institution has failed to submit an invoice. All references to "\$" refer to Canadian dollars.

The level of in-kind contributions may change as research work of the Network progresses, and may be re-assessed. For certainty, no Industry Partner shall be in breach of its obligations under this Schedule 4 due to delays in the Network.

<b>Intel</b>						
Year	Equipment		Technical Staff Time		Company	Totals
	In-kind	Cash	In-kind	Cash	Cash	
1	\$15,470	\$0	\$26,560	\$0	\$15,000	\$57,030
2	15,470	0	26,560	0	15,000	57,030
3	15,470	0	26,560	0	0	42,030
4	15,470	0	26,560	0	0	42,030
5	15,470	0	26,560	0	0	42,030
<b>Totals</b>	<b>\$77,350</b>	<b>\$0</b>	<b>\$132,800</b>	<b>\$0</b>	<b>\$30,000</b>	<b>\$240,150</b>

<b>Advanced Micro Devices (AMD)</b>						
Year	Equipment		Technical Staff Time		Company	Totals
	In-kind	Cash	In-kind	Cash	Cash	
1	\$0	\$0	\$10,000	\$0	\$0	\$10,000
2	0	0	10,000	0	0	10,000
3	0	0	10,000	0	0	10,000
4	0	0	10,000	0	0	10,000
5	0	0	10,000	0	0	10,000
<b>Totals</b>	<b>\$0</b>	<b>\$0</b>	<b>\$50,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$50,000</b>

<b>Huawei</b>						
<b>Year</b>	<b>Equipment</b>		<b>Technical Staff Time</b>		<b>Company</b>	<b>Totals</b>
	<b>In-kind</b>	<b>Cash</b>	<b>In-kind</b>	<b>Cash</b>	<b>Cash</b>	
1	\$0	\$0	\$0	\$0	\$0	\$0
2	0	0	39,000	0	0	39,000
3	0	0	108,600	0	0	108,600
4	0	0	108,600	0	0	108,600
5	0	0	108,600	0	0	108,600
<b>Totals</b>	<b>\$0</b>	<b>\$0</b>	<b>\$364,800</b>	<b>\$0</b>	<b>\$0</b>	<b>\$364,800</b>

<b>Google</b>						
<b>Year</b>	<b>Equipment</b>		<b>Technical Staff Time</b>		<b>Company</b>	<b>Totals</b>
	<b>In-kind</b>	<b>Cash</b>	<b>In-kind</b>	<b>Cash</b>	<b>Cash</b>	
1	\$0	\$0	\$0	\$0	\$0	\$0
2	0	0	0	0	0	0
3	0	0	12,500	0	0	12,500
4	0	0	12,500	0	0	12,500
5	0	0	12,500	0	0	12,500
<b>Totals</b>	<b>\$0</b>	<b>\$0</b>	<b>\$37,500</b>	<b>\$0</b>	<b>\$0</b>	<b>\$37,500</b>

<b>Qualcomm</b>						
<b>Year</b>	<b>Equipment</b>		<b>Technical Staff Time</b>		<b>Company</b>	<b>Totals</b>
	<b>In-kind</b>	<b>Cash</b>	<b>In-kind</b>	<b>Cash</b>	<b>Cash</b>	
1	\$0	\$0	\$18,560	\$0	\$0	\$18,560
2	0	0	18,560	0	0	18,560
3	0	0	18,560	0	0	18,560
4	0	0	18,560	0	0	18,560
5	0	0	18,560	0	0	18,560
<b>Totals</b>	<b>\$0</b>	<b>\$0</b>	<b>\$92,800</b>	<b>\$0</b>	<b>\$0</b>	<b>\$92,800</b>

## SCHEDULE 5

### **Requirements for the Public Announcement of NSERC Grants, Scholarships and Prizes**

As a federal granting agency, the Natural Sciences and Engineering Research Council of Canada (NSERC) is responsible for demonstrating to Canadians the exceptional value and importance of the research it funds.

NSERC grants, scholarships and prizes present valuable public relations opportunities for post-secondary institutions, government and partners. Over the years, NSERC has successfully collaborated with individuals and organizations to increase the visibility and impact of public announcements.

NSERC has specific roles and responsibilities that it must fulfill whenever it engages in a public relations event. For example, NSERC is required to brief the Minister of Industry on all public announcements. The involvement of federally or provincially elected representatives requires special consideration for protocol and puts additional demands on the planning process. We therefore request that you contact NSERC before any invitations are extended or event dates are confirmed.

Before you begin planning a public announcement (i.e., an event, news release and/or Web site posting) related to one of NSERC's grants, scholarships or prizes, please contact NSERC.

If you are acknowledging NSERC in your materials, we ask that you to:

- inform NSERC;
- include a quote from NSERC's President in materials for the media or general public, if applicable; NSERC staff will provide a quote on request; and
- include NSERC's visual identity in media materials, presentations, publications, Web sites, advertising and promotional material.

NSERC values the feedback it receives after each event. Tell us what worked and what could be improved. We also appreciate receiving copies of any media coverage. This information is very helpful for the planning of future events. In return, we will share our knowledge and experience with you.

**Please do not hesitate to contact us for further information.**

External Relations and Communications Directorate

NSERC

Tel.: 613-996-4479

E-mail: [comm@nserc-crsng.gc.ca](mailto:comm@nserc-crsng.gc.ca)

**SCHEDULE 6****Notices****UNIVERSITY OF TORONTO:****NETWORK LEADER:**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] Dept. of Electrical & Computer Engineering Sandford Fleming Building 10 Kings' College Road Toronto, ON M5S 3G4	P. [REDACTED] F. 416-971-2526	[REDACTED]

**NETWORK MANAGER:**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] Dept. of Electrical & Computer Engineering Sandford Fleming Building 10 Kings' College Road Toronto, ON M5S 3G4	P. [REDACTED] F. 416-978-4425	[REDACTED]

**CONTRACTS OFFICER:**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] University of Toronto 100 College Street, Suite 413 Toronto, ON M5G 1L5	P. [REDACTED] F. 416-978-6052	[REDACTED]

**INSTITUTIONS:****UNIVERSITÉ DE MONTRÉAL**

CONTACT	TELEPHONE	EMAIL
<p><b>Network Investigator</b>            [REDACTED]</p> <p>Département d'informatique et de recherche opérationnelle            Pavillon André-Aisenstadt, local [REDACTED]            Université de Montréal            C.P. 6128, succursale Centre-ville            Montréal, QC            H3C 3J7</p> <p><b>For contractual matters</b>            c/o: [REDACTED]</p> <p><b>For delivery by regular mail:</b>            Université de Montréal            Pavillon 3744 Jean-Brillant            Bureau Recherche-Développement-Valorisation            C.P. 6128, succursale Centre-ville            Montréal, QC, H3C 3J7</p> <p><b>For delivery by courier service:</b>            Université de Montréal            Bureau Recherche-Développement-Valorisation            3744 Jean-Brillant, bureau 6320            Montréal, QC, H3T 1P1</p>	<p>[REDACTED]</p> <p>514-343-6111 ext. [REDACTED]</p>	<p>[REDACTED]</p> <p>[REDACTED]</p>

**ÉCOLE POLYTECHNIQUE DE MONTRÉAL**

CONTACT	TELEPHONE/FAX	EMAIL
<p><b>Network Investigator</b>            [REDACTED]</p> <p>Département de génie informatique et génie logiciel            Polytechnique Mtl /Campus UdeM            2900, boul. Édouard-Montpetit            2500, chemin de Polytechnique            Montréal (Québec) H3T 1J4</p> <p><b>For contractual matters :</b>            c/o [REDACTED]            Directeur BRCDT            Polytechnique Mtl /Campus UdeM            2900, boul. Édouard-Montpetit</p>	<p>514-340-4711 ext. [REDACTED]</p> <p>514-340-4711 ext. [REDACTED]</p>	<p>[REDACTED]</p> <p>[REDACTED]</p>



2500, chemin de Polytechnique Montréal (Québec) H3T 1J4		
--	--	--

**THE UNIVERSITY OF BRITISH COLUMBIA**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] University-Industry Liaison Office The University of British Columbia 103-6190 Agronomy Road Vancouver, British Columbia Canada V6T 1Z3	P: [REDACTED] F: 604-822-8589	[REDACTED]

**SIMON FRASER UNIVERSITY**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] Discovery 2 8888 University Drive Burnaby, B.C. V5A 1S6	F: 778-782-3477	[REDACTED]

**THE GOVERNORS OF THE UNIVERSITY OF ALBERTA**

CONTACT	TELEPHONE/FAX	EMAIL
Network Investigator: [REDACTED] Department of Electrical and Computer Sciences Faculty of Engineering University of Alberta 11- [REDACTED] Donageo Innovation Cntr for Engineering Edmonton, Alberta T6G 1H9	P: [REDACTED] F: 780-492-1811	[REDACTED]
For Contractual Matters: [REDACTED] Partnership and Institutional Programs Research Services Office University of Alberta 222 Campus Tower 8625-112 Street Edmonton, Alberta T6G 2E1	F: [REDACTED] F: 780-492-0949	[REDACTED]

**MCGILL UNIVERSITY**

CONTACT	TELEPHONE/FAX	EMAIL
<p>[REDACTED]</p> <p>James Administration Building 2nd Floor 845 Sherbrooke Street West Montreal, Quebec H3A 0G4</p>	<p>P: [REDACTED] F: 514-398-4853</p>	<p>[REDACTED]</p>

**UNIVERSITY OF VICTORIA**

CONTACT	TELEPHONE/FAX	EMAIL
<p><b>For legal or administrative matters:</b> Office of Research Services, Attn: Contracts University of Victoria Michael Williams Building, Room B202 3800 Finnerty Road (Ring Road) Victoria, BC, Canada V8P 5C2</p> <p><b>For financial matters:</b> [REDACTED]</p> <p>Accounting Services University of Victoria Michael Williams Building, [REDACTED] 3800 Finnerty Road (Ring Road) Victoria, BC, Canada V8P 5C2 Tel: 250-472-5480 Fax: 250-472-4781</p>	<p>P: 250-472-5480 F: 250-472-4781</p> <p>P: [REDACTED] F: 250-472-4781</p>	<p><a href="mailto:contract@uvic.ca">contract@uvic.ca</a></p> <p>[REDACTED]</p>

**INDUSTRY PARTNERS:****INTEL**

CONTACT	TELEPHONE/FAX	EMAIL
250 Ferrand Drive, Toronto, Ontario M3C 3G8		

**Financial Contact for Invoices:**

CONTACT	TELEPHONE/FAX	EMAIL
250 Ferrand Drive, Toronto, Ontario M3C 3G8		

**ADVANCED MICRO DEVICES**

CONTACT	TELEPHONE/FAX	EMAIL
1 Commerce Valley Drive East Thornhill, Ontario L3T 7X6		

**HUAWEI TECHNOLOGIES CANADA**

CONTACT	TELEPHONE/FAX	EMAIL
19 Allstate Parkway, Markham, Ontario, Canada L3R 5B4	905-944-5000 ext. [REDACTED]	

**GOOGLE**

CONTACT	TELEPHONE/FAX	EMAIL
111 Richmond St W Toronto, ON M5H 2G4		

**QUALCOMM**

CONTACT	TELEPHONE/FAX	EMAIL
[REDACTED] Senior Director, Technology 105 Commerce Valley Dr. West Markham, Ontario Canada L3T 7W3	[REDACTED]	[REDACTED]

**SCHEDULE 7**  
**BACKGROUND INTELLECTUAL PROPERTY ("BIP")**

Université de Montréal will contribute proprietary Background Intellectual Property to the Network. However, it will be only Background Intellectual Property already in the public domain.

**Boughaba, Samir**

---

**From:** [redacted]  
**Sent:** Thursday, October 25, 2018 4:57 PM  
**To:** [redacted] Boughaba, Samir [redacted]  
**Cc:** [redacted]  
**Subject:** Re: NSERC COHESA Agreement has been signed

Great news – thanks!

---

**From:** [redacted]  
**Reply-To:** [redacted]  
**Date:** Thursday, October 25, 2018 at 4:26 PM  
**To:** "Boughaba, Samir" <Samir.Boughaba@nserc-crsng.gc.ca>, [redacted] <[redacted]>,  
[redacted] <[redacted]>  
**Cc:** [redacted], [redacted]  
**Subject:** NSERC COHESA Agreement has been signed

Dear [redacted] and Samir,

[Large redacted block]

[Redacted block]

**Boughaba, Samir**

---

**From:** Boughaba, Samir  
**Sent:** Thursday, October 25, 2018 4:46 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: NSERC COHESA Agreement has been signed

Dear [Redacted]

I warmly congratulate you and the entire team at the University of Toronto for successfully completing this critical step.

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

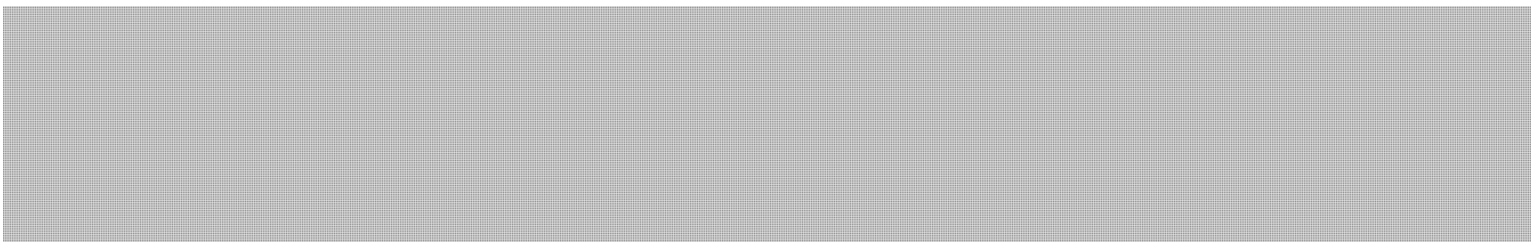
Telephone | Téléphone : 613-995-5710

Fax | Télécopieur : 613-992-5337

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**From:** [Redacted] [mailto:[Redacted]] **Duplicate email / Courriel en double**  
**Sent:** Thursday, October 25, 2018 16:26  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** NSERC COHESA Agreement has been signed

Dear [Redacted] and Samir,



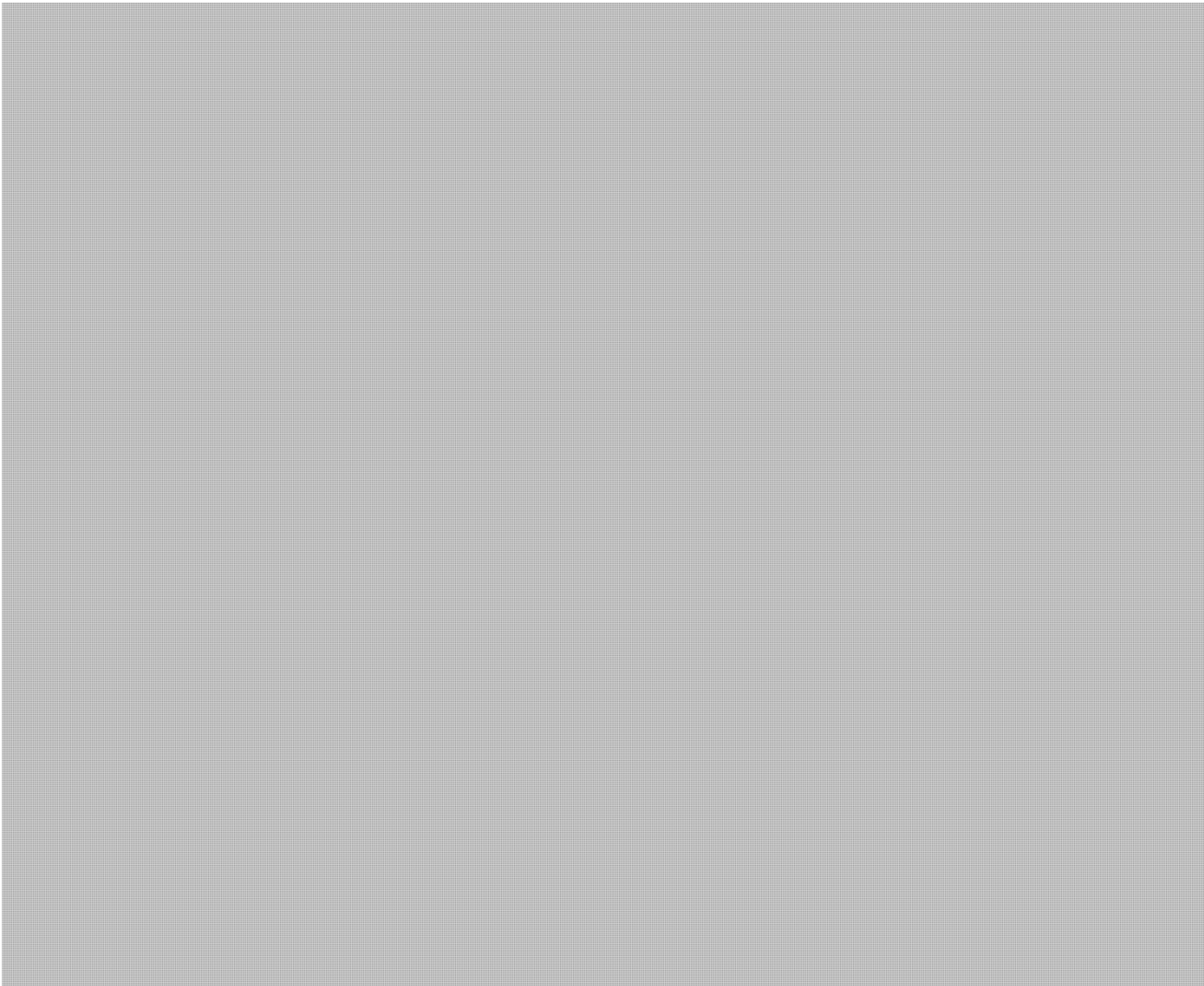
**Boughaba, Samir**

---

**From:** [REDACTED]  
**Sent:** Friday, October 12, 2018 5:25 AM  
**To:** Boughaba, Samir; [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** NSERC COHESA RPC Meeting and Agreement Update

Dear Samir and [REDACTED]

This is to update you on the RPC meeting and the agreement.





**Boughaba, Samir**

**From:** Boughaba, Samir  
**Sent:** Thursday, September 20, 2018 2:32 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: Agreement Huawei and AMD

Dear [Redacted]

[Redacted]

[Redacted]

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

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--  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

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**From:** [Redacted] [mailto:[Redacted]]

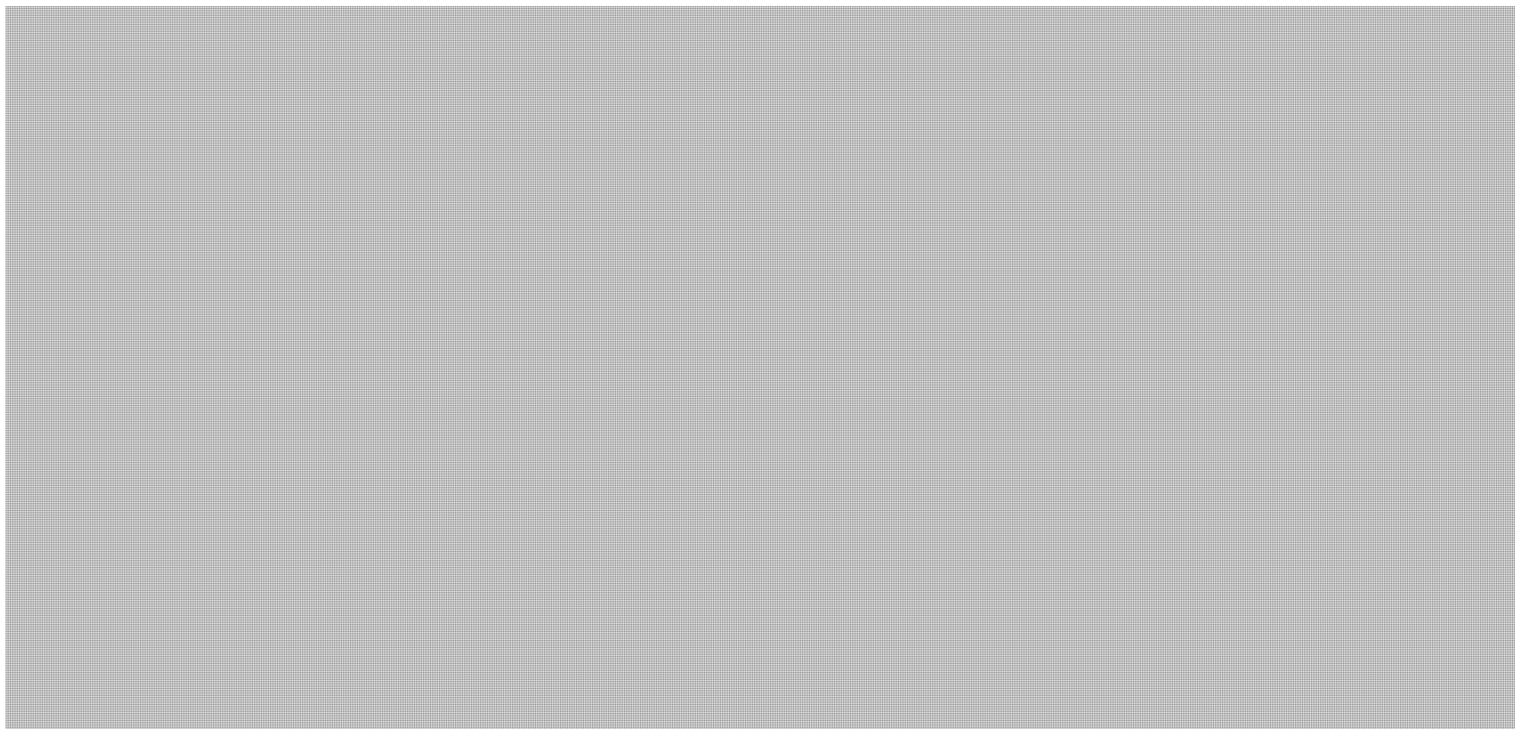
**Sent:** Friday, September 07, 2018 10:57

**To:** Boughaba, Samir

**Cc:** [Redacted]

**Subject:** Agreement Huawei and AMD

Hi Samir,



Thank you,



**Boughaba, Samir**

---

**From:** [Redacted] <[Redacted]>  
**Sent:** Tuesday, August 21, 2018 4:09 PM  
**To:** [Redacted]  
**Cc:** [Redacted] Boughaba, Samir  
**Subject:** Re: NSERC COHESA Agreement update?

[Redacted]

[Redacted]

On Tue, Aug 21, 2018 at 2:40 PM [Redacted] <[Redacted]> wrote:

Dear [Redacted] and Samir,

[Redacted]

[Redacted]

Thanks very much,

[Redacted]

Innovations & Partnerships Office  
University of Toronto  
100 College Street, Suite 413  
Toronto, Ontario, Canada M5G 1L5

[Redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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**From:** [redacted]  
**Sent:** Tuesday, August 21, 2018 2:21 PM  
**To:** [redacted] Boughaba, Samir  
 <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)>  
**Subject:** RE: NSERC COHESA Agreement update?

Hi:

[redacted]

[redacted]

**From:** [redacted]  
**Sent:** August 21, 2018 1:52 PM  
**To:** [redacted]; [redacted] <[redacted]>; Boughaba, Samir  
 <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)>  
**Subject:** NSERC COHESA Agreement update?

[redacted]

[redacted]

Thank you,

11/11/2019 10:11:11 AM



**Boughaba, Samir**

**From:** [Redacted]  
**Sent:** Tuesday, August 21, 2018 2:40 PM  
**To:** [Redacted] Boughaba, Samir  
**Subject:** RE: NSERC COHESA Agreement update?

Duplicate email / Courriel en double

Dear [Redacted] and Samir,

[Redacted]

[Redacted]

Thanks very much,

[Redacted]  
Innovations & Partnerships Office  
University of Toronto  
100 College Street, Suite 413  
Toronto, Ontario, Canada M5G 1L5

[Redacted]  
[www.research.utoronto.ca](http://www.research.utoronto.ca)

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Duplicate email / Courriel en double

**From:** [Redacted]  
**Sent:** Tuesday, August 21, 2018 2:21 PM  
**To:** [Redacted]  
crsng.gc.ca>  
**Subject:** RE: NSERC COHESA Agreement update?

Hi:

[Redacted]

[Redacted]

**Boughaba, Samir**

---

**From:** [Redacted]  
**Sent:** Monday, July 30, 2018 4:06 PM  
**To:** [Redacted]  
**Cc:** [Redacted] Boughaba, Samir; [Redacted]  
**Subject:** Re: Seeking update - Signature of Research Agreement

[Redacted]

[Redacted]

On Mon, Jul 30, 2018 at 2:57 PM [Redacted] <[Redacted]> wrote:

Hi [Redacted] and Samir,

[Redacted]

Thanks very much,

[Redacted]

[Redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone: [Redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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From: [redacted]

Sent: Monday, July 30, 2018 12:02 PM

To: Boughaba, Samir <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)>

Cc: [redacted]; [redacted]; [redacted]

Subject: Re: Seeking update - Signature of Research Agreement

[redacted]

[redacted]

On Mon, Jul 30, 2018, 6:52 PM Boughaba, Samir <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)> wrote:

Dear [redacted]

I would be grateful to you if you could please provide me with an update on the approval process of the Research Agreement by all partners and universities?

Thank you.

All the best,

Samir



**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

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Fax | Télécopieur : 613-992-5337

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**Boughaba, Samir**

---

**From:** Boughaba, Samir  
**Sent:** Monday, July 30, 2018 2:59 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: Seeking update - Signature of Research Agreement

Hello [Redacted]

Thank you very much for this update.

All the best,  
[Redacted]

-----  
**Samir Boughaba**  
**Deputy Director | Directeur adjoint**  
Research Partnerships | Partenariats de recherche  
Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

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350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
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Fax | Télécopieur : 613-992-5337  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Monday, July 30, 2018 14:58  
**To:** [Redacted] Boughaba, Samir  
**Cc:** [Redacted]  
**Subject:** RE: Seeking update - Signature of Research Agreement

Hi [Redacted] and Samir,

[Redacted]

Thanks very much,

[Redacted]

Innovations & Partnerships Office  
University of Toronto  
Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5  
Telephone: [Redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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**From:** [Redacted] Duplicate email / Courriel en double

**Sent:** Monday, July 30, 2018 12:02 PM

**To:** Boughaba, Samir <Samir.Boughaba@nserc-crsng.gc.ca>

**Cc:** [Redacted]; [Redacted]; [Redacted]

**Subject:** Re: Seeking update - Signature of Research Agreement

[Redacted]

[Redacted]

On Mon, Jul 30, 2018, 6:52 PM Boughaba, Samir <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)> wrote:

Dear [Redacted]

[Redacted]

Thank you.

All the best,

Samir

-----  
Samir Boughaba

Deputy Director | Directeur adjoint

**Boughaba, Samir**

---

**From:** Boughaba, Samir  
**Sent:** Monday, July 30, 2018 11:52 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Seeking update - Signature of Research Agreement

Dear [REDACTED]

I would be grateful to you if you could please provide me with an update on the approval process of the Research Agreement by all partners and universities?

Thank you.

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

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-----  
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**Boughaba, Samir**

---

**From:** Boughaba, Samir  
**Sent:** Thursday, July 12, 2018 9:17 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT: TEXT REVISION TO PARTNER CONTRIBUTIONS

Hi [REDACTED]

Thank you for sharing this with me. [REDACTED]

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

-----  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

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---

**From:** [REDACTED] [mailto:\[REDACTED\]](mailto:[REDACTED])  
**Sent:** Wednesday, July 11, 2018 4:10 PM  
**To:** Boughaba, Samir  
**Cc:** [REDACTED]  
**Subject:** COHESA NETWORK AGREEMENT: TEXT REVISION TO PARTNER CONTRIBUTIONS

Hi Samir:

[REDACTED]

[REDACTED]

**Pages 1013 to / à 1014  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1015 to / à 1016  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1017 to / à 1028  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Pages 1029 to / à 1038  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 1039**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 20(1)(a), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1040 to / à 1047  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1048 to / à 1049  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1050 to / à 1056  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1057 to / à 1060  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 1061 to / à 1063  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 1064**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Boughaba, Samir**

**From:** [redacted]  
**Sent:** Thursday, May 31, 2018 4:28 PM  
**To:** Boughaba, Samir  
**Cc:** [redacted]  
**Subject:** RE: NSERC COHESA Agreement -- Need your input

[redacted]

[redacted]

**From:** Boughaba, Samir [mailto:Samir.Boughaba@nserc-crsng.gc.ca]  
**Sent:** Thursday, May 31, 2018 4:19 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** RE: NSERC COHESA Agreement -- Need your input

Hi [redacted]

[redacted]

All the best,

Samir

**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

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**From:** [redacted] [mailto:\[redacted\]](mailto:[redacted])  
**Sent:** Thursday, May 31, 2018 16:14  
**To:** Boughaba, Samir; [redacted]

**Cc:** [redacted]  
**Subject:** RE: NSERC COHESA Agreement -- Need your input

Hi Samir:

[redacted]

[redacted]

---

**From:** Boughaba, Samir [mailto:[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)]  
**Sent:** Thursday, May 31, 2018 4:04 PM  
**To:** [redacted]  
**Cc:** [redacted]; [redacted]  
**Subject:** RE: NSERC COHESA Agreement -- Need your input

Dear [redacted]

[redacted]

[redacted]

I hope this provides you with helpful information.

I look forward to meeting you in July.

All the best,

Samir

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

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--  
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---

**From:** Boughaba, Samir

**Sent:** Wednesday, May 30, 2018 15:38

**To:** [REDACTED]

**Subject:** RE: NSERC COHESA Agreement -- Need your input

OK, I acknowledge 2:00 pm.

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

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---

**From:** [REDACTED] [mailto:\[REDACTED\]](mailto:[REDACTED])

**Sent:** Wednesday, May 30, 2018 15:37

**To:** Boughaba, Samir; [REDACTED]

**Subject:** RE: NSERC COHESA Agreement -- Need your input

OK per [REDACTED] suggestion let's do 2:00 pm

Conference Bridging Info:

- Local: (416) 933-8665
- Toll Free: 1 888 402-9166
- Conference ID: 9160164



**From:** Boughaba, Samir [mailto:Samir.Boughaba@nserc-crsng.gc.ca]

**Sent:** Wednesday, May 30, 2018 3:35 PM

**To:** [Redacted]

**Subject:** RE: NSERC COHESA Agreement -- Need your input

Thank you so much. Talk to you tomorrow!

Best,

Samir

----

**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

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Fax | Télécopieur : 613-992-5337

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---

**From:** [Redacted] [mailto:[Redacted]]

**Sent:** Wednesday, May 30, 2018 15:35

**To:** [Redacted] Boughaba, Samir; [Redacted]

**Subject:** RE: NSERC COHESA Agreement -- Need your input

Was just waiting for your affirmative for tomorrow at 1:30 pm. ☺

Conference Bridging Info:

- Local: (416) 933-8665
- Toll Free: 1 888 402-9166
- Conference ID: 9160164



---

**From** [Redacted]

**Sent:** Wednesday, May 30, 2018 3:33 PM

**To:** [Redacted]

**Subject:** FW: NSERC COHESA Agreement -- Need your input

I'm free anytime tomorrow afternoon. Please reply to Samir with a time that's best for you.

[REDACTED] – can you pls set up a conference call #?

Cheers,  
[REDACTED]

---

**From:** Boughaba, Samir <[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)>  
**Sent:** Wednesday, May 30, 2018 3:29 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: NSERC COHESA Agreement -- Need your input

Dear [REDACTED]

Thank you so much for this update. Congratulations! I am pleased to hear that [REDACTED] it  
[REDACTED] would be my pleasure to discuss the dates of the Agreement with you and your team tomorrow (Thursday). I  
would be available in the afternoon, starting from 1:30 pm. Please let me know what time suits your calendars  
and what number I should call you at.

I look forward to talking with you.

All the best,

Samir

-----  
**Samir Boughaba**

**Deputy Director | Directeur adjoint**

Research Partnerships | Partenariats de recherche

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

[Samir.Boughaba@nserc-crsng.gc.ca](mailto:Samir.Boughaba@nserc-crsng.gc.ca)

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Telephone | Téléphone : 613-995-5710

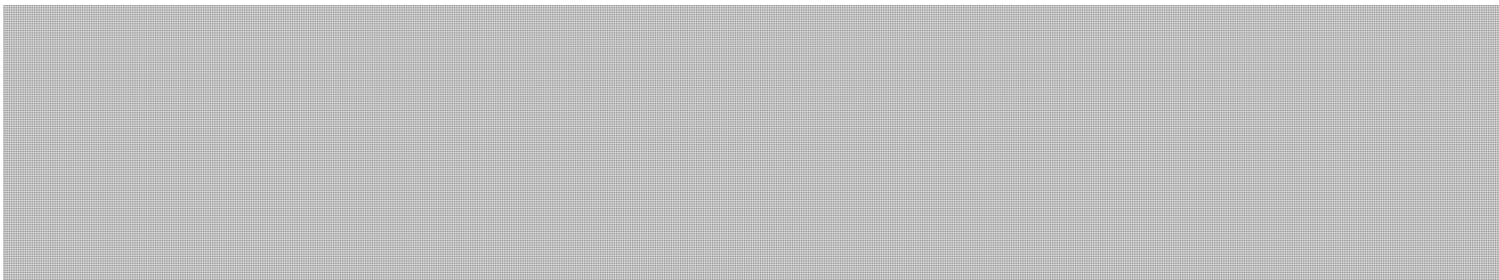
Fax | Télécopieur : 613-992-5337

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---

**From:** [REDACTED] ; [mailto:[REDACTED]]  
**Sent:** Wednesday, May 30, 2018 15:23  
**To:** Boughaba, Samir  
**Cc:** [REDACTED]  
**Subject:** NSERC COHESA Agreement -- Need your input

Dear Samir,



Thank you,



**Boughaba, Samir**

---

**From:** [Redacted]  
**Sent:** Wednesday, May 30, 2018 3:23 PM  
**To:** Boughaba, Samir  
**Cc:** [Redacted]  
**Subject:** NSERC COHESA Agreement -- Need your input

Dear Samir,

[Redacted]

Thank you,

[Redacted]

**Boughaba, Samir**

---

**From:** [redacted] on behalf of [redacted]  
>  
**Sent:** Thursday, April 12, 2018 1:07 PM  
**To:** Benoit, Andrea  
**Cc:** [redacted]  
**Subject:** Re: COHESA NETWORK AGREEMENT

Hi Andrea,

[redacted]

[redacted]

On Thu, Apr 12, 2018 at 9:52 AM, Benoit, Andrea <[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)> wrote:

Hello [redacted]

Kind regards,  
Andrea

---

**From:** [redacted]  
**Sent:** Monday, March 19, 2018 3:33 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** RE: COHESA NETWORK AGREEMENT

Hi All, [redacted]

[redacted]

---

**From:** [redacted] [[mailto:\[redacted\]](mailto:[redacted])]  
**Sent:** February-21-18 4:57 PM  
**To:** Benoit, Andrea; [redacted]  
**Cc:** [redacted]  
**Subject:** RE: COHESA NETWORK AGREEMENT

Hi All.



[Redacted]

[Redacted]

**From:** Benoit, Andrea [<mailto:Andrea.Benoit@NSERC-CRSNG.GC.CA>]

**Sent:** Tuesday, February 20, 2018 9:50 AM

**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** Re: COHESA NETWORK AGREEMENT

Hello,

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Kind regards,

Andrea

Sent from my BlackBerry 10 smartphone on the Rogers network.

**From:** [Redacted]

**Sent:** Friday, February 16, 2018 4:56 PM

**To:** [Redacted]

**Reply To:** [Redacted]

**Cc:** [Redacted] Benoit, Andrea

**Subject:** Re: COHESA NETWORK AGREEMENT

[Redacted]

On Fri, Feb 16, 2018 at 4:47 PM, [Redacted] wrote:

[Redacted]

[Redacted]

**From:** [Redacted] [mailto:[Redacted]] **On Behalf Of** [Redacted]

**Sent:** Friday, February 16, 2018 4:41 PM

**To:** [Redacted]

**Cc:** [Redacted]; Andrea Benoit <[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)>

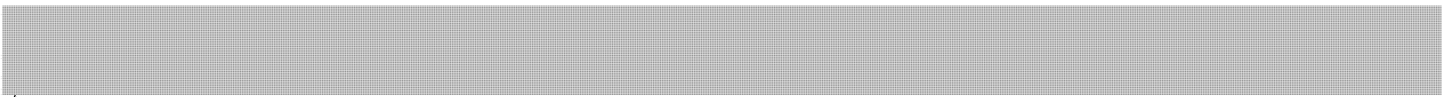
**Subject:** Re: COHESA NETWORK AGREEMENT

[Redacted]

Thanks!

[Redacted]

On Fri, Feb 16, 2018 at 4:20 PM, [Redacted] wrote:



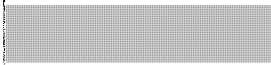
**From:** [redacted] [mailto:[redacted]]  
**Sent:** Friday, February 16, 2018 4:19 PM  
**To:** [redacted] <[redacted]>; 'Andrea Benoit' <[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)>  
**Subject:** COHESA NETWORK AGREEMENT  
**Importance:** High

**Hi Everyone:**

I am requesting that we organize a call next week to discuss the COHESA Network Agreement start date as it applies to [redacted] Please reply with your available day(s) and time(s).

H [redacted]

Kindly extend this invitation request the other [redacted] officials who are involved in this matter.



s.13(1)(c)

s.19(1)

s.20(1)(b)

s.20(1)(c)

**Boughaba, Samir**

---

**From:** Benoit, Andrea  
**Sent:** Thursday, April 12, 2018 9:53 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT

Duplicate email / Courriel en double

Hello [REDACTED]  
[REDACTED]

Kind regards,  
Andrea

---

**From:** [REDACTED] Duplicate email / Courriel en double  
**Sent:** Monday, March 19, 2018 3:33 PM  
**To:** [REDACTED] Benoit, Andrea; [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT

[REDACTED]

---

**From:** [REDACTED] Duplicate email / Courriel en double  
**Sent:** February-21-18 4:57 PM  
**To:** Benoit, Andrea; [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT

Hi All.  
[REDACTED]

---

**From:** Benoit, Andrea [<mailto:Andrea.Benoit@NSERC-CRSNG.GC.CA>] Duplicate email / Courriel en double  
**Sent:** Tuesday, February 20, 2018 9:50 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Re: COHESA NETWORK AGREEMENT

[REDACTED]

[REDACTED]

**Boughaba, Samir**

**From:** Benoit, Andrea  
**Sent:** Wednesday, March 28, 2018 6:31 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: Another question regarding the network agreement

[Redacted]  
The contributions for year 1 will be for the adjusted or extended year 1 of the network, not just the first year as of the start date of the network. Any shortcomings in in-kind can also be made up in the following year if feasible.

I hope that helps.

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**  
**Deputy Director | Directrice Adjointe**  
Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)  
350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-996-4853  
Facsimile | Télécopieur | 613-947-6371  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

**From:** [Redacted] **On Behalf Of** [Redacted]  
**Sent:** Monday, March 26, 2018 4:31 PM  
**To:** Benoit, Andrea  
**Cc:** [Redacted]  
**Subject:** Another question regarding the network agreement

Andrea,

[Redacted]

[Redacted]

Thanks and I hope all is well,

[Redacted]

**Boughaba, Samir**

---

**From:** Benoit, Andrea  
**Sent:** Thursday, March 1, 2018 5:28 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: FW: NSERC COHESA: Recent responses regarding the network agreement

Thank you both for the updates. Please keep me posted.

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**  
**Deputy Director | Directrice Adjointe**  
Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--  
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350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5  
Telephone | Téléphone | 613-996-4853  
Facsimile | Télécopieur | 613-947-6371  
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**From** [Redacted] [mailto:[Redacted]] **On Behalf Of** [Redacted]  
**Sent:** Thursday, March 01, 2018 1:49 PM  
**To:** Benoit, Andrea  
**Cc:** [Redacted]  
**Subject:** Re: FW: NSERC COHESA: Recent responses regarding the network agreement

And with regards to [Redacted] I got a response earlier today (which was sent only to me). We will have a teleconference with them tomorrow Friday at 9am. I will update everyone afterwards.

Andreas

On Thu, Mar 1, 2018 at 1:02 PM, [Redacted] <[Redacted]> wrote:

Hi and [Redacted]

[Redacted]

---

**From:** [Redacted]  
**Sent:** March-01-18 12:49 PM

To: [redacted]; [redacted] Benoit, Andrea  
Subject: RE: NSERC COHESA: Recent responses regarding the network agreement

Hi all,

[redacted]

Andrea, please find attached the [redacted]

[redacted]

Thanks,

[redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone [redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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From [redacted] [mailto:[redacted]] On Behalf Of [redacted]  
 Sent: Thursday, March 01, 2018 12:11 PM  
 To: [redacted] Benoit,Andrea  
 <Andrea.Benoit@nserc-crsng.gc.ca>  
 Subject: NSERC COHESA: Recent responses regarding the network agreement

[redacted]

[redacted]

[redacted]

Thank you,  
 Andrea

----- Forwarded message -----

From: [redacted]  
 To: [redacted]  
 Cc: [redacted]  
 Bcc:  
 Date: Wed, 28 Feb 2018 23:15:39 +0000  
 Subject: RE: NSERC COHESA PROJECT: NETWORK AGREEMENT & [redacted]

Adding [redacted]

Hi [redacted]

[redacted]



Regards,

[Redacted]

---

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Wednesday, February 28, 2018 3:59 PM  
**To:** [Redacted]  
**Subject:** RE: NSERC COHESA PROJECT: NETWORK AGREEMENT & [Redacted]

Hi [Redacted]

[Redacted]

If I can be of assistance in any way, please let me know.

Many thanks,

[Redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone: [Redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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---

**From:** [redacted]  
**Sent:** Wednesday, January 17, 2018 4:12 PM

**To:** [redacted]; [redacted]

**Cc:** [redacted]

**Subject:** NSERC COHESA PROJECT: NETWORK AGREEMENT & [redacted]

Hi [redacted]

[redacted]

Hi [redacted] & [redacted]

[redacted]

We eagerly await your reply.

[redacted]

---

**From:** [redacted]  
**Sent:** November-06-17 2:58 PM  
**To:** [redacted]  
**Subject:** NSERC NET GP485577-15: COHESA PROJECT - [redacted]

Hi again [redacted]

[Redacted]

[Redacted]

[Redacted]

---

**From:** [Redacted]  
**Sent:** October-26-17 2:37 PM  
**To:** [Redacted]  
**Subject:** RE: NSERC NETGP485577-15: COHESA PROJECT [Redacted]

Hi [Redacted]

[Redacted]

[Redacted]

[Redacted]

---

**From:** [Redacted] [mailto:\[Redacted\]](#)  
**Sent:** October-16-17 3:00 PM  
**To:** [Redacted]  
**Subject:** RE: NSERC NETGP485577-15: COHESA PROJECT [Redacted]

[Redacted]

[Redacted]

[Redacted]

Intel of Canada, Ltd

250 Ferrand Drive, Suite 810, Toronto, Ontario M3C 3G8

Tel: [redacted] | E-mail [redacted]

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Monday, October 16, 2017 2:43 PM  
**To:** [redacted]  
**Subject:** RE: NSERC NETGP485577-15: COHESA PROJECT - [redacted]

Hi [redacted]

[redacted]

[redacted]

[redacted]

---

**From:** [redacted]  
**Sent:** October-11-17 12:21 PM  
**To:** [redacted]  
**Subject:** RE: NSERC NETGP485577-15: COHESA PROJECT - [redacted]

Hi [redacted]

[redacted]

[redacted]

[redacted]

**From:** [redacted]  
**Sent:** September-12-17 10:24 AM  
**To:** [redacted]  
**Cc:** [redacted]; Innovations & Partnerships  
**Subject:** RE: NSERC NETGP485577-15: COHESA PROJECT - [redacted]  
**Importance:** High

Hello [redacted]

[redacted]

Thank you,  
[redacted]



UNIVERSITY OF  
TORONTO

[redacted]

[redacted]

Research Oversight and Compliance Office  
University of Toronto  
2nd Floor, McMurrich Bldg., 12 Queen's Park Crescent West  
Toronto, Ontario, CANADA M5S 1S8  
Phone: [redacted] Fax: (416)971-2010  
Email: [redacted]

Website: <http://www.research.utoronto.ca>

---

**From:** [redacted]  
**Sent:** Friday, September 08, 2017 5:57 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** NSERC NETGP485577-15: COHESA PROJECT [redacted]

Hi [redacted] & [redacted]

[redacted]

[redacted]

[redacted]

Please copy me on your correspondence. Thanks for your attention.

[redacted]

[redacted]

Tel. [redacted]

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** September-06-17 3:10 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** RE: FW: NSERC COHESA

Good Afternoon,

[Redacted]

[Redacted]

[Redacted]

Intel of Canada, Ltd

250 Ferrand Drive, Suite 810, Toronto, Ontario M3C 3G8

Tel: [Redacted] | E-mail: [Redacted]

---

**From:** [Redacted] <mailto:[Redacted]>

**Sent:** Wednesday, September 6, 2017 2:53 PM

**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** FW: FW: NSERC COHESA

Hi [Redacted]

[Redacted]

[Redacted]

[Redacted]

---

**From:** [Redacted]

**Sent:** August-04-17 12:41 PM

**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** RE: FW: NSERC COHESA

Hi Everyone:

[Redacted]

Hi [Redacted]

[Redacted]

[Redacted]

[Redacted]

**From:** [Redacted] [mailto:[Redacted]] **On Behalf Of** [Redacted]

**Sent:** August-04-17 8:13 AM

**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** Re: FW: NSERC COHESA

[Redacted]

Best regards and looking forward to working with you,

[Redacted]

On Aug 3, 2017 12:37 AM, [Redacted] <[Redacted]> wrote:

Hi [Redacted]



[Redacted]

[Redacted]

[Redacted]

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Wednesday, August 2, 2017 1:11 PM  
**To:** [Redacted]  
**Subject:** NSERC COHESA

Hi [Redacted]

[Redacted]

[Redacted]

----- Forwarded message -----

**From:** [Redacted]  
**To:** [Redacted]  
**Cc:**  
**Bcc:**  
**Date:** Wed, 28 Feb 2018 21:36:29 +0000  
**Subject:** Re: NSERC COHESA Network Agreement: Second Draft

[Redacted]

Thanks,

[Redacted]

On Wed, Feb 28, 2018, 15:43 [Redacted] wrote:

[Redacted]

Thanks very much,

[Redacted]

[Redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone: [Redacted]

[www.research.utoronto.ca](http://www.research.utoronto.ca)

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---

**From** [Redacted]

**Sent:** Thursday, February 01, 2018 2:47 PM

**To:** [Redacted]

**Subject:** RE: NSERC COHESA Network Agreement: Second Draft

Hi [Redacted]

[Redacted]

If I can be of assistance in any way, please let me know.

Many thanks,

[Redacted]

[Redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone: [Redacted]

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**From:** [Redacted]

**Sent:** Tuesday, January 16, 2018 2:09 PM

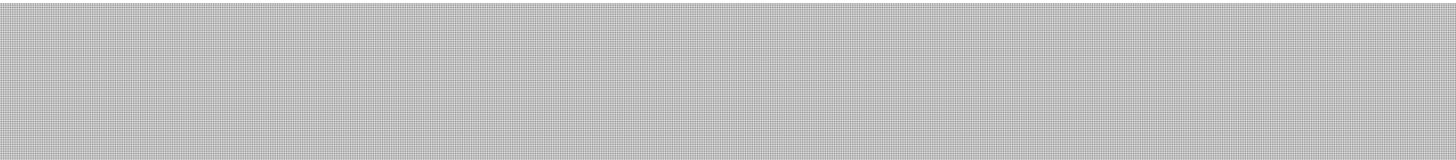
**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** NSERC COHESA Network Agreement: Second Draft

Hello all,

[Redacted]



If you are not the appropriate contact, please forward to your applicable legal or research administration representative at your institution.

Best regards,



Innovations & Partnerships Office

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--

 Software Engineer | 

----- Forwarded message -----

From:   
To:    
Cc:    
Bcc:

Date: Thu, 1 Mar 2018 02:16:43 +0000  
Subject: RE: NSERC COHESA Agreement: [redacted]

Hi [redacted]

[redacted]

[redacted]

Thanks,

[redacted]

**From:** [redacted] [mailto:[redacted]] **On Behalf Of** [redacted]

**Sent:** Wednesday, February 28, 2018 7:26 PM

**To:** [redacted]

**Cc:** [redacted]

**Subject:** NSERC COHESA Agreement: [redacted]

Dear [redacted] and [redacted]

[redacted]

[redacted]

Thank you for time and continued support, and looking forward to your response,

[redacted]

----- Forwarded message -----

**From:** [redacted]  
**To:** [redacted]  
**Cc:** [redacted]

Train [redacted]

Bcc:

Date: Thu, 1 Mar 2018 12:05:47 +0000

Subject: Re: NSERC COHESA Agreement: [redacted]

[redacted]

From: [redacted] on behalf of [redacted]

Sent: Wednesday, February 28, 2018 7:06:05 PM

To: [redacted]

Cc: [redacted]

Subject: NSERC COHESA Agreement: [redacted]

Dear [redacted] and [redacted]

[redacted]

Thank you and looking forward to hearing from you.

[redacted]

On Wed, Feb 28, 2018 at 6:58 PM, [redacted] > wrote:

Hi [redacted] & [redacted]

[redacted]

Hi [redacted]

[redacted]

A few points [redacted] & [redacted]

• [redacted]

• [redacted]

[Redacted]

[Redacted]

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** February-28-18 4:42 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: COHESA INTERN PROGRAM

Hi [Redacted]

I hope all is well. [Redacted]

Thanks

[Redacted]

**From:** [Redacted] <[Redacted]>  
**Sent:** Wednesday, February 28, 2018 4:05 PM  
**To:** [Redacted]

[Redacted]

**Cc:** Benoit' <Andrea.Benoit@nserc-crsng.gc.ca> ; 'Andrea

**Subject:** COHESA INTERN PROGRAM

Hello:

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]



**Boughaba, Samir**

---

**From:** [redacted]  
**Sent:** Wednesday, February 28, 2018 6:16 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** RE: NSERC COHESA PROJECT: NETWORK AGREEMENT & [redacted]

Adding [redacted]

Hi [redacted]

Regards,  
[redacted]

---

**From:** [redacted] [mailto:[redacted]] Duplicate email / Courriel en double  
**Sent:** Wednesday, February 28, 2018 3:59 PM  
**To:** [redacted]  
**Subject:** RE: NSERC COHESA PROJECT: NETWORK AGREEMENT & [redacted]

Hi [redacted]

Many thanks,

[redacted]  
[redacted]  
Innovations & Partnerships Office  
University of Toronto  
Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5  
Telephone: [redacted]  
[www.research.utoronto.ca](http://www.research.utoronto.ca)

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---

**From:** [redacted] Duplicate email / Courriel en double  
**Sent:** Wednesday, January 17, 2018 4:12 PM  
**To:** [redacted]; [redacted]  
**Cc:** [redacted]

**Boughaba, Samir**

**From:** [Redacted]  
**Sent:** Wednesday, February 28, 2018 4:36 PM  
**To:** [Redacted]  
**Subject:** Re: NSERC COHESA Network Agreement: Second Draft

[Redacted]

Thanks,

[Redacted]

Duplicate email / Courriel en double

On Wed, Feb 28, 2018, 15:43 [Redacted] > wrote:

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Innovations & Partnerships Office

University of Toronto

Banting Institute, 100 College Street, Suite 413 Toronto, Ontario, Canada M5G 1L5

Telephone: [Redacted]

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**Boughaba, Samir**

**From:**

[Redacted] >  
Wednesday, February 28, 2018 9:17 PM

**Sent:**

**To:**

**Cc:**

**Subject:**

[Redacted]  
[Redacted]  
RE: NSERC COHESA Agreement [Redacted]

Hi [Redacted]

[Redacted]  
[Redacted]

Thanks,

Duplicate email / Courriel en double

On Behalf Of [Redacted]

**From:**

[Redacted] [mailto:[Redacted]]

**Sent:** Wednesday, February 28, 2018 7:26 PM

**To:**

**Cc:**

**Subject:** NSERC COHESA Agreement: [Redacted]

Dear [Redacted] and [Redacted]

[Redacted]

**Boughaba, Samir**

**From:** [redacted]  
**Sent:** Thursday, March 1, 2018 7:06 AM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** Re: NSERC COHESA Agreement: [redacted]

Hi [redacted]  
If I tell our legal team we need [redacted]

Duplicate email / Courriel en double

**From** [redacted] on behalf of [redacted]

**Sent:** Wednesday, February 28, 2018 7:06:05 PM  
**To:** [redacted]  
**Cc:** [redacted]  
**Subject:** NSERC COHESA Agreement: [redacted]

Dear [redacted] and [redacted]

Duplicate email / Courriel en double

On Wed, Feb 28, 2018 at 6:58 PM, [redacted] wrote:

Hi [redacted] & [redacted]

Hi [redacted]

See below. [redacted]

A few points [redacted] & [redacted]

**Boughaba, Samir**

**From:** Benoit, Andrea  
**Sent:** Wednesday, February 28, 2018 5:55 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: COHESA network agreement deadline

Hi [Redacted]

If you like, I'm available for a call to discuss this further on Thursday at 10-10:30, 11:30-noon and 3:30-4:30 or on Friday from 9-11am.

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**

**Deputy Director | Directrice Adjointe**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

---  
[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

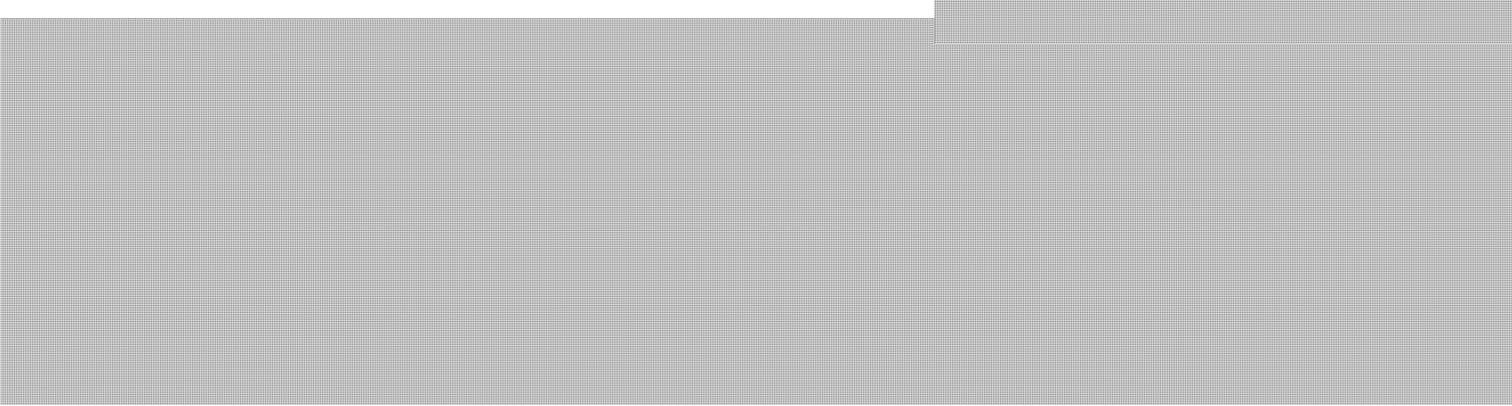
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Facsimile | Télécopieur | 613-947-6371


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**From:** [Redacted] [mailto:[Redacted]] **On Behalf Of** [Redacted]  
**Sent:** Wednesday, February 28, 2018 5:31 PM  
**To:** Benoit, Andrea  
**Cc:** [Redacted]  
**Subject:** Re: COHESA network agreement deadline

Hi Andrea,



Looking forward to talking to you,



On Wed, Feb 28, 2018 at 4:36 PM, Benoit, Andrea <[Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca)> wrote:

Hello,



Kind regards,

Andrea

-----  
**Andrea Benoit, P.Eng., MBA**

**Deputy Director | Directrice Adjointe**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

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s.13(1)(c)

s.19(1)

s.20(1)(b)

**Boughaba, Samir**

s.20(1)(c)

**From:** Benoit, Andrea  
**Sent:** Wednesday, February 21, 2018 5:00 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT

[REDACTED]

Andrea

-----  
**Andrea Benoit, P.Eng., MBA**

**Deputy Director | Directrice Adjointe**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
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-----  
**From:** [REDACTED] [mailto:[REDACTED]] **Duplicate email / Courriel en double**  
**Sent:** Wednesday, February 21, 2018 4:57 PM  
**To:** Benoit Andrea  
**Cc:** [REDACTED]  
**Subject:** RE: COHESA NETWORK AGREEMENT

Hi All.

[REDACTED]

[REDACTED]

-----  
**From:** Benoit, Andrea [mailto:[Andrea.Benoit@NSERC-CRSNG.GC.CA](mailto:Andrea.Benoit@NSERC-CRSNG.GC.CA)] **Duplicate email / Courriel en double**  
**Sent:** Tuesday, February 20, 2018 9:50 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Re: COHESA NETWORK AGREEMENT

Hello,

[REDACTED]

[REDACTED]



**Boughaba, Samir**

**From:** Benoit, Andrea  
**Sent:** Thursday, December 7, 2017 4:51 PM  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: NETGP485577-15: COHESA NETWORK AGREEMENT

Progress is good!

[Redacted]

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**  
**Deputy Director | Directrice Adjointe**  
 Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
 Research Partnerships | Partenariats de recherche  
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---

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Thursday, December 07, 2017 3:55 PM  
**To:** Benoit, Andrea  
**Cc:** [Redacted]  
**Subject:** RE: NETGP485577-15: COHESA NETWORK AGREEMENT

Hi Andrea:

[Redacted]

[Redacted]

---

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** December-07-17 3:00 PM  
**To:** Benoit, Andrea;  
**Cc:** [Redacted]  
**Subject:** Re: NETGP485577-15: COHESA NETWORK AGREEMENT

[Redacted]

**From:** Andrea Benoit <[Andrea.Benoit@NSERC-CRSNG.GC.CA](mailto:Andrea.Benoit@NSERC-CRSNG.GC.CA)>

**Date:** Thursday, December 7, 2017 at 2:51 PM

**To:** [Redacted]

**Cc:** [Redacted]

**Subject:** RE: NETGP485577-15: COHESA NETWORK AGREEMENT

Hi [Redacted]

[Redacted]

[Redacted]

Hope that helps,  
Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**

**Deputy Director | Directrice Adjointe**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

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**From:** [Redacted] [mailto:[Redacted]]

**Sent:** Tuesday, December 05, 2017 5:34 PM

**To:** Benoit,Andrea

**Cc:** [Redacted]

**Subject:** NETGP485577-15: COHESA NETWORK AGREEMENT

Hi Andrea:

[Redacted]

[Redacted content]

P.S.

[Redacted content]

---

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Si vous recevez ce courriel par erreur, veuillez en aviser l'expéditeur immédiatement, par retour de courriel ou par un autre moyen. Vous avez accepté de recevoir le(s) document(s) ci-joint(s) par voie électronique à l'adresse courriel indiquée ci-dessus; veuillez conserver une copie de cette confirmation pour les fins de référence future.

**Boughaba, Samir**

---

**From:** Andrea.Benoit  
**Sent:** Thursday, November 2, 2017 1:13 PM  
**To:** [Redacted]  
**Subject:** FW: NETGP485577-15: COHESA NETWORK AGREEMENT [Redacted]  
**Importance:** High

Hello [Redacted] and [Redacted]

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**  
**Deputy Director | Directrice Adjointe**  
Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
Research Partnerships | Partenariats de recherche  
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---

**From:** Godin, Angèle  
**Sent:** Thursday, November 02, 2017 11:54 AM  
**To:** Benoit, Andrea  
**Subject:** FW: NETGP485577-15: COHESA NETWORK AGREEMENT [Redacted]  
**Importance:** High

Voilà!

---

**From:** [Redacted] [mailto:\[Redacted\]](mailto:[Redacted])  
**Sent:** Thursday, November 02, 2017 11:44 AM  
**To:** Godin, Angèle  
**Cc:** [Redacted]  
**Subject:** NETGP485577-15: COHESA NETWORK AGREEMENT - [Redacted]  
**Importance:** High

s.13(1)(c)

s.19(1)

s.20(1)(b)

s.20(1)(c)

Hi Angele:

[Redacted]

[Redacted]

Thank You for your help Angele.

[Redacted]

Hi [Redacted]

**From** [Redacted] **On Behalf Of** [Redacted]  
**Sent:** November-02-17 8:59 AM  
**To** [Redacted]  
**Cc:** [Redacted]  
**Subject:** Re: FW: NSERC COHESA Network Agreement [Redacted]

[Redacted]

Thank you and we will follow up,

[Redacted]

On Thu, Nov 2, 2017 at 8:55 AM, [Redacted] wrote:

Hello Guys.

[Redacted]

[Redacted]

Hi [REDACTED]

s.13(1)(c)

s.19(1)

s.20(1)(b)

s.20(1)(c)

**Ben Andrea**

---

**From:** Benoit,Andrea  
**Sent:** Wednesday, June 28, 2017 9:41 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: NETGP.485577-15 COHESA

Dear [REDACTED]

[REDACTED]

Kind regards,  
Andrea

-----  
**Andrea Benoit, P.Eng., MBA**  
**Deputy Director | Directrice Adjointe**  
Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies  
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---

**From:** [REDACTED] [mailto:[REDACTED]]  
**Sent:** Friday, June 23, 2017 2:58 PM  
**To:** Benoit,Andrea [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** NETGP 485577-15 COHESA

Hi Andrea,

You will find attached [REDACTED]

Thanks,  
[REDACTED]

Innovations & Partnerships Office  
University of Toronto  
Banting Institute, 100 College St., Suite 413  
Toronto, ON M5G 1L5  
P. [REDACTED] F. 416-978-6052  
[REDACTED]

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**Pages 966 to / à 981  
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sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 982**

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est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 983 to / à 989  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 990 to / à 996  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 997 to / à 1007  
are withheld pursuant to sections  
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**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 1008**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
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**Pages 1009 to / à 1012  
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sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Boughaba, Samir**

---

**From:** Benoit, Andrea  
**Sent:** Wednesday, June 14, 2017 4:44 PM  
**To:** [REDACTED]  
**Subject:** RE: NSERC COHESA Funds transfers & Agreement

Hi [REDACTED]  
[REDACTED]

[REDACTED]

Kind regards,  
Andrea

---

**From:** [REDACTED] on behalf of [REDACTED]

**Sent:** Wednesday, June 14, 2017 10:28 AM  
**To:** Benoit, Andrea  
**Subject:** NSERC COHESA Funds transfers & Agreement

Hi Andrea,

[REDACTED]

Thank you and see you soon,

[REDACTED]





Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
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350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

February 27, 2017

File:

NETGP 485577 - 15

Fiscal Year:

2015 - 2016

**PROTECTED**

Dr. A. Moshovos  
Edward S. Rogers Sr. Dept. of Electrical  
& Computer Engineering  
University of Toronto  
10 KINGS COLLEGE RD  
TORONTO ON M5S 3G4

Dear Dr. Moshovos:

Re: **Strategic Partnership Grants for Networks Application entitled "NSERC COHESA: Computing Hardware for Emerging Intelligent Sensory Applications," with IBM Canada Ltd, Mitacs, Altera Canada Company, Advanced Micro Devices, Huawei Technologies Canada, Google Inc Canada, Qualcomm Canada Inc., Intel of Canada Ltd, Maluuba Inc.**

Subsequent to our letter of June 30<sup>th</sup> 2016, additional funding has been allocated to Strategic Partnership Grants for Networks. Therefore, it is my pleasure to inform you that a grant was approved for the above-mentioned application. The award was approved as follows:

**Award Start Date: June 30, 2016**

Year	Awarded Amount	Fiscal Year	Payment amount	Fiscal Year Total (For NSERC's use)
1	\$1,000,000.00	2016	\$1,000,000.00	\$1,000,000.00
2	\$1,125,000.00	2017	\$933,750.00	
		2018	\$191,250.00	
3	\$1,125,000.00	2018	\$933,750.00	
		2019	\$191,250.00	
4	\$1,125,000.00	2019	\$933,750.00	
		2020	\$191,250.00	
5	\$1,125,000.00	2020	\$933,750.00	
		2021	\$191,250.00	

By drawing on the funds provided through this grant or by participating in the activities supported by it, you agree to comply with the following policies and guidelines, and to any amendments to these that NSERC may adopt:

- Section 2 of the *Tri-Agency Framework: Responsible Conduct of Research* (Responsibility of Researchers) posted on the Web site of the Secretariat for Responsible Conduct of Research at <http://www.rcr.ethics.gc.ca/eng/policy-politique/framework-cadre/>;
- the NSERC *Program Guide for Professors* on NSERC's Web site at [www.nserc-crsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes\\_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/ProgramGuide-GuideDesProgrammes_eng.asp); and
- the *Tri-Agency Financial Administration Guide* at [www.nserc-crsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/index_eng.asp).

The cash commitments of NSERC and the partner organizations to the network are summarized below.

	NSERC Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$1,000,000
Year 2				\$1,125,000
Year 3				\$1,125,000
Year 4				\$1,125,000
Year 5				\$1,125,000
TOTAL				\$ 5,500,000

NSERC is releasing the first year grant installment to the host university with this notice. It is our expectation that these grant funds will be distributed to co-investigators without delay so that network researchers may begin their research immediately.

NSERC expects that the collaborating universities will create network specific accounts for the co-investigators as soon as the network funds arrive so that research can begin as soon as possible.

The expectation is that research will be well underway within six months of the award start date.

**The following conditions must be completed prior to the release of the second grant installment:**

**Within three months:**

NSERC must approve the Board of Directors' membership before the board can be established. The membership of this Board must reflect the interests and concerns of the public, private and academic sectors involved in the Network. It should include some members not directly affiliated with the Network, stakeholder representatives, a researcher from the Network and the Chair of the Scientific Committee, as well as an NSERC Staff Member as a non-voting member. NSERC retains the right to name additional voting members to the Board to ensure objectivity, and the perception of objectivity, in the management of the Network. The Chair of the Board must not be from any of the participating institutions receiving Network funds.

The Network must hold its initial Board meeting to, at a minimum, approve its mandate and review any recommendations or suggestions to the applicants by the Selection Committee and/or the SVC. In particular, the Selection Committee and the SVC recommend that a clearly defined management plan be provided, comprising the list of deliverables/milestones that are planned to be completed by the time the midterm progress report is due to NSERC.

**Within six months:**

The Research Agreement between all participating universities and partner organizations must be signed. NSERC suggests that the host university pattern the research agreement after similar Network research agreements that have been signed in the past. Many of the participating universities will have previously signed Network research agreements and should have copies of these documents.

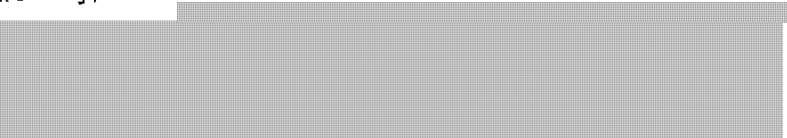
The release of the second instalment of this grant is conditional upon the satisfactory completion of these conditions. An explanation of how NSERC payments are disbursed, and the conditions that apply to this grant, are described in the enclosed Terms and Conditions of Award. The Grant Summary indicates the dates on which the progress and final reports are due at NSERC. Reminders will be sent to you approximately six weeks before the reports are due.

To help elevate NSERC's visibility, I encourage you to acknowledge NSERC's support in any dealings that you might have with the media regarding this project. I would also encourage you to add NSERC's logo (visual identifier) to your university Web page(s) that present aspects of this project. The logo can be found here: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/VisualIdentity-IdentiteVisuelle_eng.asp).

Finally, I would like to take this opportunity to congratulate you and your research team on your successful NSERC Strategic Partnership Grants for Networks proposal.

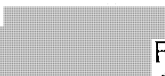

Do not hesitate to contact Andrea Benoit at (613) 996-4853 or at [Andrea.Benoit@nserc-crsng.gc.ca](mailto:Andrea.Benoit@nserc-crsng.gc.ca) if you need any further assistance.

Yours truly,

  
Anne-Marie Thompson  
Director  
Energy, Environment and Resources  
Research Partnerships  
NSERC

AMT/kb

Enclosures

cc:  Research, Toronto  
 Finance, Toronto  
M. Stumm, Electrical & Computer Engineering, Toronto  
Y. Bengio, Informatique et recherche opérationnelle, Montréal  
S.J.E. Wilton, Electrical and Computer Engineering, British Columbia  
C.L. Verbrugge, Computer Science, School of, McGill  
L.L. Shannon, Engineering Science, School of, Simon Fraser  
A. Chan Carusone, Electrical & Computer Engineering, Toronto

T.M. Aamodt, Electrical and Computer Engineering, British Columbia  
C.J. Pal, Génie informatique et génie logiciel, École Polytechnique de  
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N.D. Enright Jerger, Electrical & Computer Engineering, Toronto  
A. Shriraman, Computing Science, School of, Simon Fraser  
M. Hossain, Electrical and Computer Engineering, Alberta  
R. Urtasun, Computer Science (St. George Campus), Toronto  
S. Eidler, Computer Science (St. George Campus), Toronto  
[REDACTED] Electrical and Computer Engineering, British Columbia  
[REDACTED] IBM Canada Ltd  
[REDACTED] Mitacs  
[REDACTED] Altera Canada Company  
[REDACTED] Advanced Micro Devices  
[REDACTED] Huawei Technologies Canada  
[REDACTED] Google Inc Canada  
[REDACTED] Qualcomm Canada Inc.  
[REDACTED] Intel of Canada Ltd  
[REDACTED] Maluuba Inc.  
M. Perron, NSERC Communications  
J. Wong, NSERC Finance



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

## TERMS AND CONDITIONS OF AWARD

### Grant Summary

**File:** NETGP 485577 - 15

**Project Title:** NSERC COHESA: Computing Hardware for Emerging Intelligent Sensory Applications

**Principal Investigator:** A.M. Moshovos, Electrical & Computer Engineering, Toronto

**Supporting Organizations:**

- IBM Canada Ltd
- Mitacs
- Altera Canada Company
- Advanced Micro Devices
- Huawei Technologies Canada
- Google Inc Canada
- Qualcomm Canada Inc.
- Intel of Canada Ltd
- Maluuba Inc.

**Co-grantees:**

- M. Stumm, Electrical & Computer Engineering, Toronto
- Y. Bengio, Informatique et recherche opérationnelle, Montréal
- S.J.E. Wilton, Electrical and Computer Engineering, British Columbia
- C.L. Verbrugge, Computer Science, School of, McGill
- L.L. Shannon, Engineering Science, School of, Simon Fraser
- A. Chan Carusone, Electrical & Computer Engineering, Toronto
- T.M. Aamodt, Electrical and Computer Engineering, British Columbia
- C.J. Pal, Génie informatique et génie logiciel, École Polytechnique de Montréal
- K.N. Kutulakos, Computer Science (St. George Campus), Toronto
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- M. Hossain, Electrical and Computer Engineering, Alberta
- R. Urtasun, Computer Science (St. George Campus), Toronto
- S. Fidler, Computer Science (St. George Campus), Toronto
- M. Lis, Electrical and Computer Engineering, British Columbia

**Collaborators:**

- École Polytechnique Féd. de Lausanne
- Stony Brook University
- Imperial Col of Sci, Tech and Med

**Project Start Date:** 2016/06/30      **Project End Date:** 2021/06/29

**Report Due Dates:**

Annual Verification	2017/04/30
Annual Verification	2018/04/30
Progress Report 1	2018/12/30
Annual Verification	2020/04/30
Final Report	2021/10/29

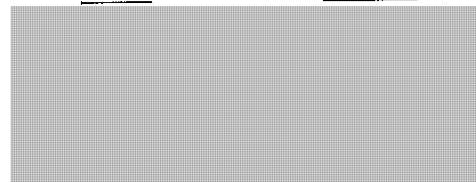
**Note: A yearly scientific and financial progress report must be submitted to the Board of Directors for their discussion and approval. A mid-term progress report must be submitted to NSERC which is peer reviewed.**

**Amount of Award**

**Supporting Organization  
Contributions**

1/5	\$1,000,000	2016/06/30
2/5	\$933,750	2017/06/30
2/5	\$191,250	2018/04/01
3/5	\$933,750	2018/06/30
3/5	\$191,250	2019/04/01
4/5	\$933,750	2019/06/30
4/5	\$191,250	2020/04/01
5/5	\$933,750	2020/06/30
5/5	\$191,250	2021/04/01

<u>CASH</u>	<u>IN KIND</u>
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Deputy Director  
Andrea Benoit  
Research Partnerships

Telephone: (613) 996-4853  
Fax: (613) 992-5337  
E-mail: Andrea.Benoit@nserc-crsng.gc.ca

## Terms and Conditions of Award Strategic Partnership Grants for Networks

### 1. Introduction

The Terms and Conditions for a Research Partnerships (RP) grant is a statement that establishes the responsibilities of each party in the collaboration and highlights important policies affecting the grant.

By drawing on the funds provided through this award, you (the "grantee" or "co-grantee", collectively referred to as the "grantees") confirm that, during the tenure of this grant/award, you and the co-grantee(s) will comply with the following terms and conditions. You will insure that the terms and conditions of this award are known and understood by the industry partners and/or other participating organizations (collectively referred to as "the supporting organizations"). In addition, the grantees acknowledge their obligation to cooperate in working towards a successful outcome and to meeting their reporting and financial obligations.

### 2. General

1. **You will use grant funds (including financial contributions from both NSERC and the industry partners) only for the specific purposes for which they were awarded.** Grant funds may not be used for items not approved, or for unauthorized purposes such as indirect costs of research.
2. You will provide true, complete, accurate information in any documents related to your grant/award, and you will represent yourself, your research and your accomplishments in a manner consistent with the norms of the relevant field.
3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
5. You are not currently ineligible to apply for and/or hold funds from NSERC, the Social Sciences and Humanities Research Council (SSHRC), or the Canadian Institutes of Health Research (CIHR), or any other research or research funding organization worldwide for reasons of breach of policies on responsible conduct of research, such as ethics, integrity or financial management policies. If at any time you become ineligible for any of these reasons, you will advise your institutional officials and NSERC immediately, in writing.
6. You will comply with the [Tri-Agency Framework: Responsible Conduct of Research](#), which includes but is not limited to the [Tri-Agency Financial Administration Guide](#), the Program Guide for Professors, and the Tri-Agency Research Integrity Policy, and with any amendments to these that NSERC may adopt.
7. If you are or have been (at any time during the past 12 months) a federal public servant, you have complied with and will continue to respect the [Values and Ethics Code for the Public Service](#).
8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
9. In the event of any change in your eligibility status, you will inform NSERC and your institutional officials immediately, in writing.

10. You will inform institutional officials of any changes in the nature of the research that may have an impact on certification or approvals as in section 2.4 Agency Requirements for Certain Types of Research of the Tri-Agency Framework: Responsible Conduct of Research.
11. You will inform NSERC and your institutional officials of any changes in the nature of the research that may require an environmental review/assessment or involves the use of human pluripotent stem cells. You will not proceed with these research activities requiring additional certification until NSERC approval has been obtained.
12. You will inform your institutional officials if your research plan changes to include new activities involving humans or the use of animals. You will not proceed with these research activities until institutional approval has been obtained.

Unless otherwise specified, the policies governing RP awards, including both the NSERC financial contribution and the industry partners' financial contribution are the same as those that apply generally to NSERC awards and to the use of grant funds.

In addition, you understand that:

the Access to Information Act and the Privacy Act (ATIP), and the Use and Disclosure of Personal Information Provided to NSERC, pertain to the information NSERC collects from and about you.

### **3. Duration of the Award**

The duration of the award is indicated by the start and end dates in the Grant Summary.

A written request for an extension will be considered by NSERC and will be approved if the need for an extension is well-justified associated with the original objectives of the award, and as long as there is agreement with other participants and collaborators.

### **4. Schedule of NSERC Payments**

The approved amount of the grant is given in the Grant Summary.

In order to maximize the management of public funds, NSERC will release annual instalments of awards according to the following schedule:

- Up to \$250,000 – one payment
- \$250,001 < \$500,000 – two payments at six month intervals
- \$500,001 < \$1,000,000 – four payments at three month intervals
- \$1,000,001 or more – monthly payments

### **5 Release of Instalments**

The second and subsequent instalments will be released on or about the anniversary of the start date subject to:

- the availability of funds;
- confirmation that the supporting organization partner(s) have met their obligations in providing cash and in-kind support;
- confirmation of continued financial support by the supporting organization(s) partner(s) for the upcoming year;
- satisfactory review of progress;
- demonstrated need for funds.



The membership of this committee should reflect the multi-sectoral and multidisciplinary nature of the Network research program. The management of the research program requires ongoing assessment of all projects in order to provide recommendations to the Board regarding research priorities and budget allocations.

The Scientific Committee should ensure a mechanism is in place for external assessment of the projects when appropriate. This may be through an external advisory committee. All such assessments should be submitted to the Scientific Committee for discussion and funding changes should be submitted to the Board for approval.

### **Principal Investigator**

Each Network has a principal investigator who reports to the Board. The principal investigator is responsible for providing scientific leadership and direction to the Network. Other duties include: management of the Network; providing NSERC with scientific and financial reports approved by the Board; recruiting a network manager; promoting research collaboration among Network participants; acting on behalf of the Network with NSERC; and promoting the Network to the scientific community, the private and public sectors, and the general public.

### **Network Manager**

A Network must have a senior full time manager with the appropriate background and expertise to direct the business and financial management of the Network. This network manager provides the logistics support, leadership and direction for all of the Network operations and ensures control and accountability on a day-to-day basis. Scientific background is preferred but not mandatory.

### **Communications**

Network activities, results and accomplishments should also be conveyed to external audiences, including potential participants from all sectors, public policy makers, the media and the general public. Each Network must develop a communications plan with a set of comprehensive objectives and activities designed to enhance interest in the Network and its research activities and to promote the Network to all sectors that may benefit. NSERC requires a one-page description of the Network that includes the objectives and the number of participating researchers, universities and partners for the NSERC Web page. Examples can be found on NSERC's active Network Web page ([http://www.nserc-crsng.gc.ca/Partners-Partenaires/Networks-Reseaux/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Partners-Partenaires/Networks-Reseaux/index_eng.asp)).

## **8. Progress Reporting and Review**

A yearly scientific and financial progress report must be submitted to the Board for their discussion and approval.

As indicated in the Grant Summary, the grantee will provide a mid-term report that describes progress to date and updates the plans for the future conduct of the research and the resources required to complete the approved work. NSERC will send reminders that a progress report or other information is due, and will provide guidelines on the items to be addressed. At its discretion, NSERC may require a progress report when one is not normally required. A final report will be required six months after the end of the network.

## **9. Budgets**

Some latitude is allowed in adherence to planned expenditures, however, NSERC must approve the reallocation of resources of more than 20% of an approved budget line item in advance.

The Board of Directors has responsibility, along with the principal investigator and the Scientific Advisory Board, for overall management of the budget.

NSERC requires an annual statement of account of the overall expenses of the Network's research program and the Network management prior to release of the next installment. Major deviations from the approved budget must be justified. Some latitude is allowed in adherence to planned expenditures, however; NSERC must approve the reallocation of resources of more than 20 percent of an approved budget item in advance.

NSERC bears no responsibility for expenditures beyond the amount in the grant account.

#### **10. Participation of the Supporting Organizations**

Each supporting organization agrees to:

- honour its commitment to the project (in cash and/or in kind) as approved;
- provide periodic assessments, as requested by NSERC, to assist in the evaluation of the progress of the research;
- make every effort to use the project results in its Canadian operation and to the benefit of the Canadian economy and Canadians.

#### **11. Intellectual Property**

The grantee and co-grantees, the universities, and supporting organizations agree to abide by NSERC's Policy on Intellectual Property ([http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/ip-pi\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/ip-pi_eng.asp)). NSERC's *Policy on Intellectual Property (IP)* supports the premise that every effort should be made to exploit the results of NSERC-funded research in Canada, for the benefit of Canadians. As a condition of accepting an award, NSERC grantees agree to disclose to their institutions any IP with commercial potential arising from the award should they decide to pursue commercialization. If you disclose any potential IP arising from the research, you and the institution will endeavour to obtain the greatest possible economic benefit to Canada resulting from the commercial activity. This requirement for disclosure is not intended to supersede the IP ownership policy that the institution might already have in place.

#### **12. Change of Status – Grantees**

The grantee and/or the university will inform NSERC immediately of significant changes in the status of the grantee and/or co-grantees such as taking a sabbatical or other leave, or upon permanent departure from the university.

#### **13. Change of Status – Supporting Organizations**

The grantee will notify NSERC immediately of any change in status of the supporting organizations in the grant. These changes could include any or all of the following:

- Contact name at the organization;
- Buyouts, change of ownership and subsequent name change of the organization;
- Withdrawal or adjustment of cash and/or in-kind support;
- New organizations participating.

Depending on the change, a new Form 183A (Information Required from Organizations Participating in Research Partnerships Programs) may have to be completed including a letter of support (<http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/183A/e.asp>).

#### **14. Termination of Support**

NSERC reserves the right to terminate support at any point:

1. should progress be found to be unsatisfactory;
2. if the support of the supporting organization(s) falls to a level substantially less than the amount stated in the Grant Summary, or is withdrawn entirely and a suitable replacement cannot be found;
3. for other issues that may arise.

In the event of early termination of an award, NSERC will negotiate an orderly phase-out of the project or program to ensure minimal disruption, especially for any HQP in training. However, in cases where there is an allegation of a breach of NSERC policy or a confirmed breach, the Tri-Agency Framework: Responsible Conduct of Research applies.

#### **15. Public Announcements and Acknowledgement of NSERC Support**

NSERC normally makes a decision on the need for an official public announcement of competition results. Your institution must refrain from making any announcements until this takes place. All announcement of awards must be made in adherence to the <http://www.science.gc.ca/default.asp?lang=En&n=711200B1=1> (also see relevant sections of the <http://www.science.gc.ca/default.asp?lang=En&n=56B87BE5-1>).

Funding recipients may be asked to take part in NSERC's public announcement. This does not prevent you from confidentially sharing information about your funding with your collaborators or referring to NSERC funding in applications for other funding. If you foresee any issues or concerns arising from this condition, please contact NSERC.

By drawing on the funds provided through this award, the grantees agree that in all communications relating to the research, or research results, they will acknowledge NSERC support and the support of the participating Canadian Government department and/or agencies.

#### **16. Other Conditions**

The following conditions must be completed prior to the release of the second grant installment:

##### **Within three months:**

NSERC must approve the Board of Directors' membership before the board can be established. The membership of this Board must reflect the interests and concerns of the public, private and academic sectors involved in the Network. It should include some members not directly affiliated with the Network, stakeholder representatives, a researcher from the Network and the Chair of the Scientific Committee, as well as an NSERC Staff Member as a non-voting member. NSERC retains the right to name additional voting members to the Board to ensure objectivity, and the perception of objectivity, in the management of the Network. The Chair of the Board must not be from any of the participating institutions receiving Network funds.

The Network must hold its initial Board meeting to, at a minimum, approve its mandate and review any recommendations or suggestions to the applicants by the Selection Committee and/or the SVC. In particular, the Selection Committee and SVC recommend that a clearly defined management plan be provided, comprising the list of deliverables/milestones that are planned to be completed by the time the midterm progress report is due to NSERC.

T.M. Aamodt, Electrical and Computer Engineering, British Columbia  
C.J. Pal, Génie informatique et génie logiciel, École Polytechnique de  
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S. Fidler, Computer Science (St. George Campus), Toronto

M. Lis, Electrical and Computer Engineering, British Columbia

[REDACTED], IBM Canada Ltd

[REDACTED] Mitacs

[REDACTED] Altera Canada Company

[REDACTED] Advanced Micro Devices

[REDACTED] Huawei Technologies Canada

[REDACTED] Google Inc Canada

[REDACTED] Qualcomm Canada Inc.

[REDACTED] Intel of Canada Ltd

[REDACTED] Maluuba Inc.

M. Perron, NSERC Communications

J. Wong, NSERC Finance

Depending on the above, the amount of the instalment is negotiable.

NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

## **6. Research Objectives and Training**

The grantees and the collaborators will make every effort to adhere to the approved research plan. The Board of Directors, Scientific Advisory Committee and NSERC must approve major deviations in the approved plan or research objectives **before** the changes are implemented.

The training of highly qualified personnel is an NSERC priority. Any deviations in the approved training plan must receive prior authorization from NSERC.

**Salaries to postdoctoral fellows are limited to two years' support from NSERC.** Three years' support is acceptable, when justified, to attract exceptional foreign candidates. The three-year appointment must be offered up front and reported to NSERC with written justification within one month of an offer being accepted. Individuals can be retained beyond these limitations if their appointments are converted to a research associate or equivalent position.

## **7. Interactions and Governance**

Consistent with the intent of fostering productive research collaborations, the grantees will hold regular discussions with the supporting organizations to exchange information, examine results, review priorities and consider measures to enhance mutual benefits. NSERC should be informed of any major developments or situations where NSERC staff might be of assistance.

### **Board of Directors**

Each Network must appoint a Board of Directors that has overall responsibility for the management, direction and fiduciary accountability of the Network. The Board is accountable to NSERC and to those non-university participants making a substantial contribution to the Network. The names and affiliations of its members are considered public information.

The Network must obtain the approval of NSERC for the overall composition of the Board, and seek NSERC's approval for any changes in membership during the course of funding.

The membership of the Board must reflect the interests and concerns of the public, private and academic sectors involved in the Network. It should include some members not directly affiliated with the Network, stakeholder representatives, a researcher from the Network, and the Chair of the Scientific Committee, as well as a NSERC Manager as a non-voting member. NSERC retains the right to name additional voting members to the Board to ensure objectivity, and the perception of objectivity, in the management of the Network. The Chair of the Board must not be from any of the participating institutions.

The Board's initial meeting should be within the first quarter of the Network's first year to approve its own mandate, and be apprised of the development and implementation of the Network research program to date. At least one face to face meeting of the board should be held annually. Additional meetings can be held as required.

### **Scientific Committee**


The Scientific Committee is primarily made up of researchers from the Network (academic, industry and government) who assist the principal investigator in managing the scientific research program of the Network. It is also recommended to have at least one external researcher on this committee who has no stake in the Network activities.

**Within six months:**

The Research Agreement between all participating universities and partner organizations must be signed. NSERC suggests that the host university pattern the research agreement after similar Network research agreements that have been signed in the past. Many of the participating universities will have previously signed Network research agreements and should have copies of these documents.

The release of the second instalment of this grant is conditional upon the satisfactory completion of these conditions.

**17. Consent to Disclosure of Personal Information:**

You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the  Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

**Note:** If you have any concerns about your ability to comply with the terms and conditions listed above, contact your institutional official or NSERC staff responsible for the program immediately. Do not agree to the terms and conditions and do not draw down on any funds paid to you or to the host institution until you are certain that you can and will comply with all of the requirements.



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

Canada



**Natural Sciences and Engineering Research Council of Canada**  
**Conseil de recherches en sciences naturelles et en génie du Canada**

www.nserc-crsng.gc.ca



509801-2017, Xianbin Wang, CRDPJ, Huawei Technologies Co., Ltd.

### NSERC Partner Report

Our records indicate that your organization was involved in the following project. Is this correct?

#### Collaborative Research and Development Grants - Project

**File Number:** 509801-2017  
**Applicant:** Xianbin Wang  
**Program:** CRDPJ  
**Organization:** Huawei Technologies Co., Ltd.  
**Project Name:** Situation-aware and adaptive physical layer designs for highly efficient Wi-Fi (hew) in iot communications  
**Grant dates:** from 10/1/2017 to 9/30/2018

Is the personal information, as shown below, correct?

Yes

Huawei Technologies Co., Ltd.  
303 TERRY FOX DR SUITE 400  
OTTAWA  
ON K2K3J1  
CANADA

Tel: (613) 595-1900 ext. [redacted]

Email: [redacted]

Please enter your contact information:

Please enter the number of employees in Canada that your organization employs:

[redacted]

Which of the following codes would best describe your organization's core business?

[redacted]

s.19(1)

s.20(1)(b)

s.20(1)(c)



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*North American Industry Classification System (NAICS):*

51 - Information and cultural industries

**Does your organization sell products or services to:**

**Please select all that apply.**

- Local/regional markets
- Provincial markets
- National markets
- International markets
- N/A
- Don't know

**Connection**

Please tell us how your project was initiated.

**1a. Who initiated the Collaborative Research and Development Grants - Project?**

**Please select all that apply.**

- The researcher at the post-secondary institution
- My organization
- Another organization
- Industry association, please specify:
- A member of the college Business/Tech Transfer
- Other, please specify:
- Don't know

**1b. How did you meet the researcher?**

**Please select all that apply.**

- I know the researcher due to past collaborations
- I was referred to the researcher and/or the post-secondary institution by another contact
- The post-secondary institution provided me with a referral
- I contacted NSERC Ottawa Head Office for a referral
- I contacted an NSERC regional office for a referral





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- I found the researcher through the NSERC awards database
- An industry association or group provided me with a referral, please specify:
- A government agency provided me with a referral, please specify:
- I attended an event/conference and made a connection; please specify which event:
- Other, please specify:
- Don't know

**2a. How were you and/or others at your organization involved in the project?**

Please select all that apply.

- Involved in planning the research project
- Conducted research activities integral to the project
- Available for consultation
- Provided equipment or facilities
- Staff or faculty from the post-secondary institution worked at our organization .
- Company personnel worked at the post-secondary institution
- Students worked at our organization
- Personnel from our organization received training at the post-secondary institution
- Other, please specify:
- No involvement in the project apart from a cash and/or in kind contribution

**Partnership**

**3. On how many research projects has your organization collaborated with an academic institution?**

[Redacted]

**4a. During the project, how frequently did you and/or members of your team interact with the research team?**

[Redacted]

**4b. Was your organization involved in any of the following phases of the project?**

Please select all that apply.

- Planning of research to address needs of organization
- Decision-making regarding design / methodology

s.19(1)  
s.20(1)(b)  
s.20(1)(c)



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- Development of data collection tools / equipment
- Analysis / interpretation of research findings
- Exchange / dissemination of knowledge and / or technology
- Use / application of knowledge and / or technology
- Other, please specify:
- Don't know
- None of the above

5. NSERC is interested to know how successful the project was in advancing the technology of interest. **Technology Readiness Levels (TRLs)** are a way of classifying the readiness for use of technologies. Please rate the TRL of this technology before and after the project (see description of levels below).

Pre-project:

Post-project:



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Level of Readiness	Description of Level	
Actual technology proven through successful deployment in an operational setting	Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations. Activities include using the innovation under operational conditions.	9
Actual technology completed and qualified through tests and demonstrations	Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.	8
Prototype ready for demonstration in an appropriate operational environment	Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.	7
System/subsystem model or prototype demonstration in a simulated environment	A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.	6
Component and/or validation in a simulated environment	The basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.	5
Component and/or validation in a laboratory environment	Basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.	4
Analytical and experimental critical function and/or proof of concept	Active research and development is initiated. This includes analytical studies and/or laboratory studies. Activities might include components that are not yet integrated or representative.	3
Technology concept and/or application formulated	Invention begins. Once basic principles are observed, practical applications can be invented. Activities are limited to analytic studies.	2
Basic principles of concept observed and reported	Scientific research begins to be translated into applied research and development. Activities might include paper studies of a technology's basic properties.	1



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### Impact of Results and Technology Transfer

6. Which of the following activities and outputs added value to the project?

Select all that apply.

- Informal discussions and correspondence
- The students participation
- Presentations by research team members
- Technical workshops
- The research team's guidance, advice and / or expertise
- Reports that will be used internally
- Formal publications
- Licensing agreements
- Other, please specify:
- None of the above

7a. Based on your selections from the previous question, please rate the value to your organization:

1 is Somewhat Valuable and 7 is Very Valuable

	1	2	3	4	5	6	7
Informal discussions and correspondence							
The students participation							
Presentations by research team members							
Technical workshops							
The research team's guidance, advice and / or expertise							
Reports that will be used internally							
Formal publications							
Licensing agreements							
Other (described above)							

7b. Did the research project have on impact on:

Please select all that apply.

[Redacted area for question 7b]



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- Your organization
- Your industrial sector
- Government programs/policies
- The public good
- None of the above

7c. Based on your selections from the previous question, to what extent did the project have an impact on:

1 is Low Impact and 7 is Significant Impact

	1	2	3	4	5	6	7
Your organization							
Your industrial sector							
Government programs/policies							
The public good							

8a. Did your organization's participation in the project result in any of the following benefits?

Please select all that apply.

- Enhanced the skill and knowledge sets of personnel
- Improved [project] and development capabilities
- Established new and/or improved a research or manufacturing facility
- Developed a new and/or improved a prototype product, process or service
- Created new jobs
- Gained access to specialized or hard to reach workforce
- Increased the diversity of the workforce
- Improved ability to meet or influence a policy, standard and/or regulation
- Improved productivity
- Attracted new investment
- Increased access to new markets
- Improved competitiveness
- Enhanced reputation
- Other, please specify:
- None of the above



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8b. Based on benefits you selected in the previous question, please rate their relative impact to your organization.

1 is Low Impact and 7 is Significant Impact

	1	2	3	4	5	6	7
Enhanced the skill and knowledge sets of personnel							
Improved and development capabilities							
Established new and/or improved a research or manufacturing facility							
Developed new and/or improved a prototype product, process or service							
Created new jobs							
Gained access to specialized or hard to reach workforce							
Increased the diversity of the workforce							
Improved ability to meet or influence a policy, standard and/or regulation							
Improved productivity							
Attracted new investment							
Increased access to new markets							
Improved competitiveness							
Enhanced reputation							
Other (described above)							

8c. Please indicate an implementation timeline for each of the impacts selected in the previous question (8a).

Enhanced the skill and knowledge sets of personnel:  
project

Improved and development capabilities

Established new and/or improved a research or manufacturing facility:

Developed a new and/or improved a prototype product, process or service:

Created new jobs:

Gained access to specialized or hard to reach workforce:

Increased the diversity of the workforce:

Improved ability to meet or influence a policy, standard and/or regulation:



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Improved productivity:

Attracted new investment:

Increased access to new markets:

Improved competitiveness:

Enhanced reputation:

Other (described above):

**8d. What impacts did the research results have on the public good?**

Please select all that apply

- Reduced environmental impact
- Improved health or safety
- Reduced energy consumption
- A positive social impact
- Other, please specify:
- Don't know
- None of the above

**8e. Please indicate an implementation timeline for each of the impacts selected in the previous question.**

Reducing environmental impact:

Improving health or safety:

Reducing energy consumption:

Affecting a positive social impact:

Other (described above):

**Future Plans**

**9a. In order to apply any new knowledge and/or technology gained, are there any further steps that need to be carried out?**



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- No
- Don't know

**9b. What further steps still need to be carried out by your organization?**

Please select all that apply

- Operationalization/process implementation
- Further research
- Technical feasibility studies
- Marketing studies
- Cost analysis
- Prototype development
- Scale-up activities
- Other, please specify:
- Don't know

**9c. Please indicate the reason(s) why no further steps are required?**

Please select all that apply.

- No further research is needed (i.e., project objectives were met)
- The project did not yield relevant results
- your organization decided not to continue in that strategic business direction
- Other, please specify:
- Don't know

**10a. Do you have plans to conduct further partnered research activity?**

- Yes
- Ongoing discussions for future partnerships
- No further partnered research activity planned
- Don't know

**10b. Will the future partnered research activity involve any of the following?**

Please select all that apply.

- The same academic institution
- Other academic institution(s), please specify:
- Public organization(s), please specify:
- Other organization(s), please specify:





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Don't know

**10c. Please indicate the reason(s) why no further research will take place with the same academic institution?**

Please select all that apply.

- Opportunity to work together has not arisen
- Unavailability of necessary personnel
- Limited internal and/or external funding
- Difficulty reaching agreeable contract terms
- The project did not yield relevant results
- Other, please specify:
- Don't know

**10d. How do you anticipate additional research partnerships will be funded?**

Please select all that apply.

- Funded internally
- NSERC Grants
- Other government funding, please specify:
- Mitacs
- Other, please specify:
- Don't know

**10e. Please specify which NSERC grants will help fund additional research partnerships?**

Please select all that apply.

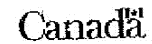
- Collaborative Research and Development Grant
- Strategic Partnership Grants for Networks
- Strategic Partnership Grants for Projects
- Engage
- Engage Plus
- Applied Research and Development Grant
- Industrial Research Chair
- Collaborative Research and Development / Applied Research and Development Grant (CRD/ARD)
- College-University Idea to Innovation Grants (CU-I2I)
- Innovation Enhancement

s.19(1)  
s.20(1)(b)  
s.20(1)(c)



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Technology Access Centres  
Other, please specify:  
Undecided

**People**

In this section we are measuring the impact on academic participants in your project, this may include college students, undergraduate students, master's students, doctoral students, postdoctoral fellows, research associates and technicians.

**11a. Did your organization hire anyone from the post-secondary institution during the project and/or after its completion?**

Please include any internships, temporary employees and permanent hires in this section.

Select all that apply.

- College students
- Bachelor students
- Masters students
- PhD students
- Postdoctoral fellows
- Other (i.e. engineers, research assistants, technicians)
- Don't know
- No

**11b. If you're willing to share, please indicate the reason(s) why no individuals were hired by your organization?**



**11b. Based on your selections in the previous question, please indicate the number of hires:**

Please include any internships, temporary employees and permanent hires in this section.

- College students:
- Bachelor students:
- Masters students:
- PhD students:
- Postdoctoral fellows:
- Other (i.e. engineers, research assistants, technicians):





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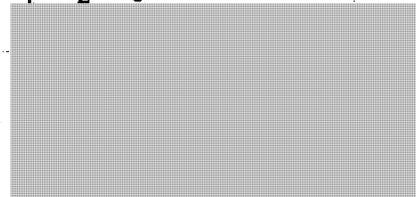


**11c. To what extent did the following influence your decision to hire participants from the project?**

*1 is Not at all 7 is to a Great Extent*

They were job-ready and required less training than other new hires  
They had demonstrated the knowledge, experience and/or technical skills we needed  
They became known to my organization

1 2 3 4 5 6 7



**Overall Success of the Project**

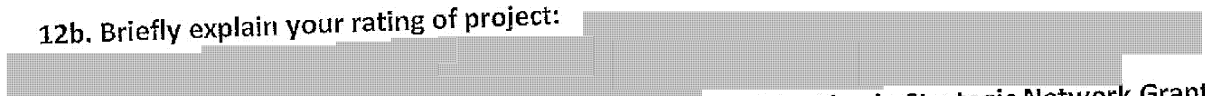
**12a. From your perspective, to what extent was the project a success (i.e., Were objectives achieved? Were your organization's expectations met)?**

*1 is Not at all 7 is to a Great Extent*

1 2 3 4 5 6 7



**12b. Briefly explain your rating of project:**



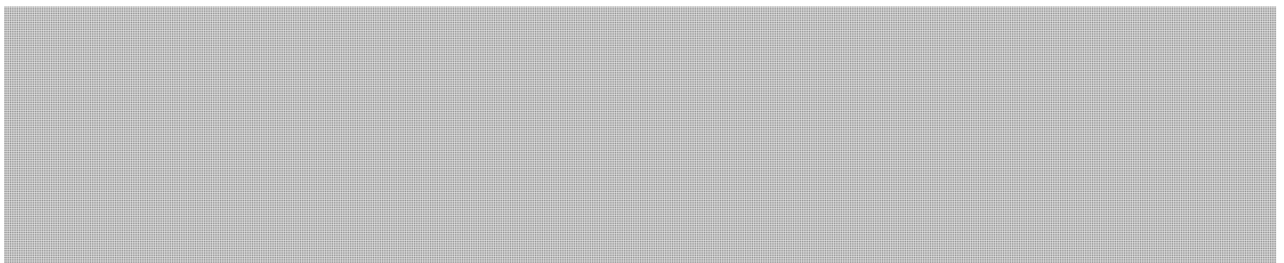
**12c. What is your assessment of the pros and cons of participating in Strategic Network Grants rather than in separate projects i.e. CRDs?**



**13a. Based on your organization's experience, would you recommend academic research collaboration to others?**

- Yes
- No
- Don't know

**13b. Why not?**





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14a. Based on your organization's experience in this project, would you recommend NSERC programs to others?

- Yes
- No
- Don't know

14b. Why not?

15. If applicable, please provide a statement about your experience that NSERC could use to communicate the positive impact of this grant?

16. Do you consent to having the verbatim comments you provided throughout the report for use on our website or in other promotional materials for NSERC programs?

- Yes, with my name, the name of my organization and grant type
- Yes, but only if presented anonymously
- Yes, but please contact me first
- No

**Limiting Factors**

17a. Were there any factors that limited the achievement of the project's objectives?

- Yes
- No
- Don't know

17b. To what extent did the following factors limit the achievement of the project objectives?

1 is Not at all 7 is to a Great Extent

	1	2	3	4	5	6	7	N/A
Project planning and management								
Technical issues								
Financial issues and/or external factors								



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Communication issues  
Staffing and recruitment issues

**17c. Please briefly describe the key issues limiting the achievement of the project objectives:**

**18a. Would the research project have proceeded without NSERC funding?**

- Yes
- No
- Don't know

**18b. How would your organization have proceeded without the NSERC grant?**

- Would have financed the project internally
- Would have entered into a contract with the post-secondary institution to complete the research
- Would have narrowed the scope of the research and proceeded on a smaller scale
- Would have outsourced the research to an external firm
- Would have hired additional staff and conducted the research internally
- Would have sought funding from other sources to complete the project
- Other, please specify:
- Don't know

**Financial Impact and Job Creation**

In order to assess the overall economic impact of NSERC funding programs, we are requesting information on your organization's financial performance. This information will remain confidential and will not be shared with other government agencies. Your information will only be presented in aggregate form to help illustrate the impact of NSERC grants.

**19a. Are you able to provide information on your organization's performance in the last fiscal year:**

- Annual Revenue
- Annual R&D Budget
- Total number of employees in Canada
- Total number of R&D scientists and technicians
- Total number of R&D staff with PhD's
- Number of FTE's hired



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- Communication issues
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- Don't know

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s.19(1)  
s.20(1)(b)  
s.20(1)(c)



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None of the above

**19b. Based on your responses to the previous question, please report on your Canadian business operation(s) for the last fiscal year:**

When completing this information, please only refer to Canadian revenues, budgets and employees in the last fiscal year.

Annual revenue:  
Annual R&D budget:  
Total number of employees in Canada:  
Total number of R&D scientist and technicians:  
Total number of R&D staff with PhD's:  
Number of FTE's hired

**20a. Has your organization experienced growth in any of the following areas throughout the course of the project?**

- Annual Revenue
- Annual R&D Budget
- Total number of employees in Canada
- Total number of R&D scientists and technicians
- Total number of R&D staff with PhD's
- None of the above
- Don't know

**20b. Based on your responses to the previous question, to what extent can growth in your organization be attributed to your participation in the project?**

*1 is not at all 7 is to a great extent*

	1	2	3	4	5	6	7
Annual revenues							
Annual R&D budget							
Number of employees in Canada							
Number of R&D scientists and technicians							
Number of R&D staff with PhD's							



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### Additional Feedback

21. If you have any further comments about the project and/or your experience with NSERC's funding opportunities, please provide them below.

21b. Can you provide a statement about your experience that NSERC could use to communicate the impact of these grants? Or, select the checkbox to indicate that we have your permission to use your statements from the above section.

22. Would you like to provide any additional feedback on the online Partner Final Report design, content, relevance and time to complete in this field. Thank you







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Ottawa, Canada  
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Ottawa, Canada  
K1A 1H5

January 16, 2018

File: CRDPJ 517550 - 17

Dr. X. Wu  
Department of Electrical and  
Computer Engineering  
McMaster University  
1280 MAIN ST W  
HAMILTON ON L8S 4K1

Dear Dr. Wu:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled  
"Image/video restoration in ill lighting conditions", with Huawei Technologies  
Canada**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the McMaster University.

The start date establishes the reporting and payment schedules. **The requested IP agreement must cover, at a minimum, the entire duration of the NSERC project.**

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the industrial sponsors to this project are summarized below.

	Original Amount Requested	Industrial Cash	Industrial In-kind	Amount Recommended
Year 1				
Year 2				
Year 3				
TOTAL				

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

[Redacted signature block]

Sylvia Williams  
Senior Program Officer  
Research Partnerships

Telephone: (613) 996-2571  
Fax: (613) 992-5337  
E-Mail: Sylvia.Williams@nserc-crsng.gc.ca

SW/ph

Enclosure

cc: [Redacted] Research, McMaster  
Huawei Technologies Canada



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*North American Industry Classification System (NAICS):*

51 - Information and cultural industries

**Does your organization sell products or services to:**

**Please select all that apply.**

- Local/regional markets
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**Connection**

Please tell us how your project was initiated.

**1a. Who initiated the Collaborative Research and Development Grants - Project?**

**Please select all that apply.**

- The researcher at the post-secondary institution
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**Please select all that apply.**

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**Partnership**

**3. On how many research projects has your organization collaborated with an academic institution?**

[Redacted]

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- Planning of research to address needs of organization
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- Development of data collection tools / equipment
- Analysis / interpretation of research findings
- Exchange / dissemination of knowledge and / or technology
- Use / application of knowledge and / or technology
- Other, please specify:
- Don't know
- None of the above

5. NSERC is interested to know how successful the project was in advancing the technology of interest. **Technology Readiness Levels (TRLs)** are a way of classifying the readiness for use of technologies. Please rate the **TRL** of this technology before and after the project (see description of levels below).

Pre-project:

Post-project:



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Level of Readiness	Description of Level	9
Actual technology proven through successful deployment in an operational setting	Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations. Activities include using the innovation under operational conditions.	8
Actual technology completed and qualified through tests and demonstrations	Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.	7
Prototype ready for demonstration in an appropriate operational environment	Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.	6
System/subsystem model or prototype demonstration in a simulated environment	A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.	5
Component and/or validation in a simulated environment	The basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.	4
Component and/or validation in a laboratory environment	Basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.	3
Analytical and experimental critical function and/or proof of concept	Active research and development is initiated. This includes analytical studies and/or laboratory studies. Activities might include components that are not yet integrated or representative.	2
Technology concept and/or application formulated	Invention begins. Once basic principles are observed, practical applications can be invented. Activities are limited to analytic studies.	1
Basic principles of concept observed and reported	Scientific research begins to be translated into applied research and development. Activities might include paper studies of a technology's basic properties.	

**Page 803**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**20(1)(b), 20(1)(c)**

**of the Access to Information Act  
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### Impact of Results and Technology Transfer

6. Which of the following activities and outputs added value to the project?

Select all that apply.

- Informal discussions and correspondence
- The students participation
- Presentations by research team members
- Technical workshops
- The research team's guidance, advice and / or expertise
- Reports that will be used internally
- Formal publications
- Licensing agreements
- Other, please specify:
- None of the above

7a. Based on your selections from the previous question, please rate the value to your organization:

1 is Somewhat Valuable and 7 is Very Valuable

	1	2	3	4	5	6	7
Informal discussions and correspondence							
The students participation							
Presentations by research team members							
Technical workshops							
The research team's guidance, advice and / or expertise							
Reports that will be used internally							
Formal publications							
Licensing agreements							
Other (described above)							

7b. Did the research project have on impact on:

Please select all that apply.

[Redacted area for question 7b]



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- Your organization
- Your industrial sector
- Government programs/policies
- The public good
- None of the above

7c. Based on your selections from the previous question, to what extent did the project have an impact on:

1 is Low Impact and 7 is Significant Impact

	1	2	3	4	5	6	7
Your organization							
Your industrial sector							
Government programs/policies							
The public good							

8a. Did your organization's participation in the project result in any of the following benefits?

Please select all that apply.

- Enhanced the skill and knowledge sets of personnel
- Improved [project] and development capabilities
- Established new and/or improved a research or manufacturing facility
- Developed a new and/or improved a prototype product, process or service
- Created new jobs
- Gained access to specialized or hard to reach workforce
- Increased the diversity of the workforce
- Improved ability to meet or influence a policy, standard and/or regulation
- Improved productivity
- Attracted new investment
- Increased access to new markets
- Improved competitiveness
- Enhanced reputation
- Other, please specify:
- None of the above



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8b. Based on benefits you selected in the previous question, please rate their relative impact to your organization.

1 is Low Impact and 7 is Significant Impact

	1	2	3	4	5	6	7
Enhanced the skill and knowledge sets of personnel							
Improved and development capabilities							
Established new and/or improved a research or manufacturing facility							
Developed new and/or improved a prototype product, process or service							
Created new jobs							
Gained access to specialized or hard to reach workforce							
Increased the diversity of the workforce							
Improved ability to meet or influence a policy, standard and/or regulation							
Improved productivity							
Attracted new investment							
Increased access to new markets							
Improved competitiveness							
Enhanced reputation							
Other (described above)							

8c. Please indicate an implementation timeline for each of the impacts selected in the previous question (8a).

Enhanced the skill and knowledge sets of personnel:

Improved and development capabilities:

Established new and/or improved a research or manufacturing facility:

Developed a new and/or improved a prototype product, process or service:

Created new jobs:

Gained access to specialized or hard to reach workforce:

Increased the diversity of the workforce:

Improved ability to meet or influence a policy, standard and/or regulation:

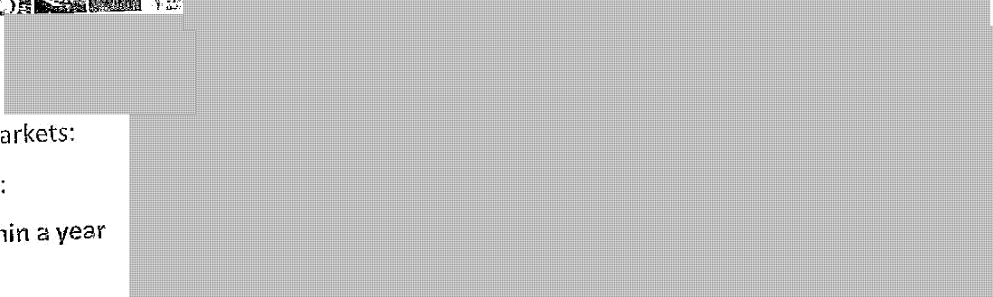


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- Improved productivity:
- Attracted new investment:
- Increased access to new markets:
- Improved competitiveness:
- Enhanced reputation: **Within a year**
- Other (described above):



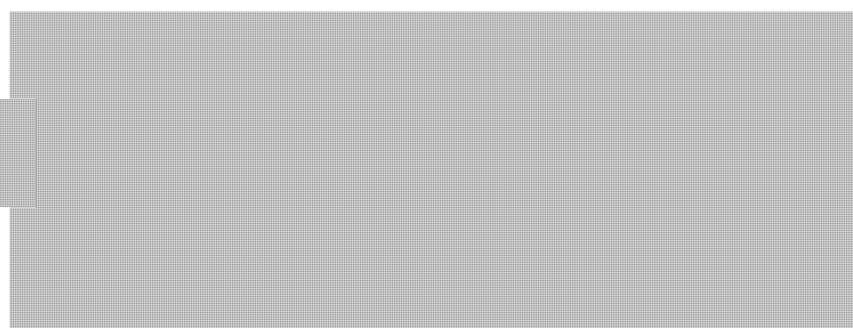
**8d. What impacts did the research results have on the public good?**

Please select all that apply

- Reduced environmental impact
- Improved health or safety
- Reduced energy consumption
- A positive social impact
- Other, please specify:
- Don't know
- None of the above

**8e. Please indicate an implementation timeline for each of the impacts selected in the previous question.**

- Reducing environmental impact:
- Improving health or safety:
- Reducing energy consumption:
- Affecting a positive social impact:
- Other (described above):



**Future Plans**

**9a. In order to apply any new knowledge and/or technology gained, are there any further steps that need to be carried out?**





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No

Don't know

**9b. What further steps still need to be carried out by your organization?**

Please select all that apply

- Operationalization/process implementation
- Further research
- Technical feasibility studies
- Marketing studies
- Cost analysis
- Prototype development
- Scale-up activities
- Other, please specify:
- Don't know

**9c. Please indicate the reason(s) why no further steps are required?**

Please select all that apply.

- No further research is needed (i.e., project objectives were met)
- The project did not yield relevant results
- your organization decided not to continue in that strategic business direction
- Other, please specify:
- Don't know

**10a. Do you have plans to conduct further partnered research activity?**

- Yes
- Ongoing discussions for future partnerships
- No further partnered research activity planned
- Don't know

**10b. Will the future partnered research activity involve any of the following?**

Please select all that apply.

- The same academic institution
- Other academic institution(s), please specify:
- Public organization(s), please specify:
- Other organization(s), please specify:



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Don't know

**10c. Please indicate the reason(s) why no further research will take place with the same academic institution?**

Please select all that apply.

- Opportunity to work together has not arisen
- Unavailability of necessary personnel
- Limited internal and/or external funding
- Difficulty reaching agreeable contract terms
- The project did not yield relevant results
- Other, please specify:
- Don't know

**10d. How do you anticipate additional research partnerships will be funded?**

Please select all that apply.

- Funded internally
- NSERC Grants
- Other government funding, please specify:
- Mitacs
- Other, please specify:
- Don't know

**10e. Please specify which NSERC grants will help fund additional research partnerships?**

Please select all that apply.

- Collaborative Research and Development Grant
- Strategic Partnership Grants for Networks
- Strategic Partnership Grants for Projects
- Engage
- Engage Plus
- Applied Research and Development Grant
- Industrial Research Chair
- Collaborative Research and Development / Applied Research and Development Grant (CRD/ARD)
- College-University Idea to Innovation Grants (CU-I2I)
- Innovation Enhancement



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Technology Access Centres

Other, please specify:

Undecided

**People**

In this section we are measuring the impact on academic participants in your project, this may include college students, undergraduate students, master's students, doctoral students, postdoctoral fellows, research associates and technicians.

**11a. Did your organization hire anyone from the post-secondary institution during the project and/or after its completion?**

Please include any internships, temporary employees and permanent hires in this section.

Select all that apply.

College students

Bachelor students

Masters students

PhD students

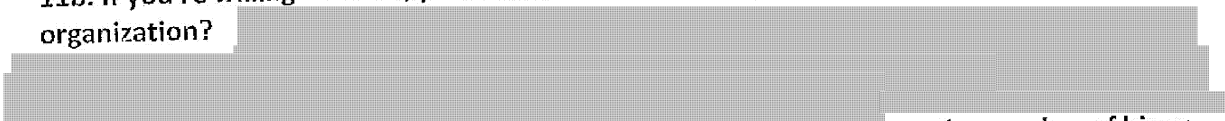
Postdoctoral fellows

Other (i.e. engineers, research assistants, technicians)

Don't know

No

**11b. If you're willing to share, please indicate the reason(s) why no individuals were hired by your organization?**



**11b. Based on your selections in the previous question, please indicate the number of hires:**

Please include any internships, temporary employees and permanent hires in this section.

College students:

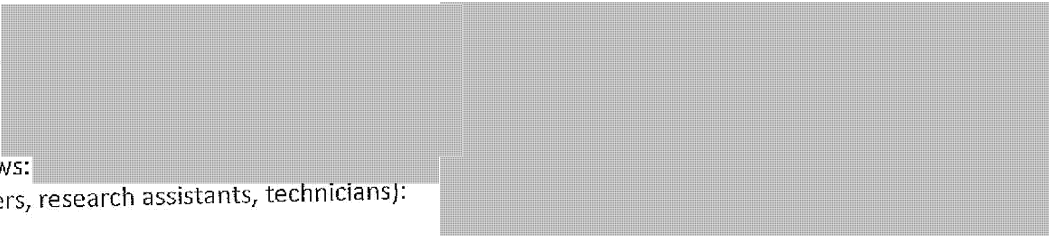
Bachelor students:

Masters students:

PhD students:

Postdoctoral fellows:

Other (i.e. engineers, research assistants, technicians):





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11c. To what extent did the following influence your decision to hire participants from the project?

1 is Not at all 7 is to a Great Extent

They were job-ready and required less training than other new hires  
They had demonstrated the knowledge, experience and/or technical skills we needed  
They became known to my organization

1 2 3 4 5 6 7

[Redacted response area]

Overall Success of the Project

12a. From your perspective, to what extent was the project a success (i.e., Were objectives achieved? Were your organization's expectations met)?

1 is Not at all 7 is to a Great Extent

1 2 3 4 5 6 7

[Redacted response area]

12b. Briefly explain your rating of project:

[Redacted response area]

12c. What is your assessment of the pros and cons of participating in Strategic Network Grants rather than in separate projects i.e. CRDs?

[Redacted response area]

13a. Based on your organization's experience, would you recommend academic research collaboration to others?

- Yes
- No
- Don't know

13b. Why not?

[Redacted response area]





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14a. Based on your organization's experience in this project, would you recommend NSERC programs to others?

- Yes
- No
- Don't know

14b. Why not?

[Redacted]

15. If applicable, please provide a statement about your experience that NSERC could use to communicate the positive impact of this grant?

[Redacted]

16. Do you consent to having the verbatim comments you provided throughout the report for use on our website or in other promotional materials for NSERC programs?

- Yes, with my name, the name of my organization and grant type
- Yes, but only if presented anonymously
- Yes, but please contact me first
- No

**Limiting Factors**

17a. Were there any factors that limited the achievement of the project's objectives?

- Yes
- No
- Don't know

17b. To what extent did the following factors limit the achievement of the project objectives?

1 is Not at all 7 is to a Great Extent

	1	2	3	4	5	6	7	N/A
Project planning and management	[Redacted]							
Technical issues	[Redacted]							
Financial issues and/or external factors	[Redacted]							



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Communication issues  
Staffing and recruitment issues

**17c. Please briefly describe the key issues limiting the achievement of the project objectives:**

[Redacted area]

**18a. Would the research project have proceeded without NSERC funding?**

- Yes
- No
- Don't know

**18b. How would your organization have proceeded without the NSERC grant?**

- Would have financed the project internally
- Would have entered into a contract with the post-secondary institution to complete the research
- Would have narrowed the scope of the research and proceeded on a smaller scale
- Would have outsourced the research to an external firm
- Would have hired additional staff and conducted the research internally
- Would have sought funding from other sources to complete the project
- Other, please specify:
- Don't know

**Financial Impact and Job Creation**

In order to assess the overall economic impact of NSERC funding programs, we are requesting information on your organization's financial performance. This information will remain confidential and will not be shared with other government agencies. Your information will only be presented in aggregate form to help illustrate the impact of NSERC grants.

**19a. Are you able to provide information on your organization's performance in the last fiscal year:**

- Annual Revenue
- Annual R&D Budget
- Total number of employees in Canada
- Total number of R&D scientists and technicians
- Total number of R&D staff with PhD's
- Number of FTE's hired



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None of the above

**19b. Based on your responses to the previous question, please report on your Canadian business operation(s) for the last fiscal year:**

When completing this information, please only refer to Canadian revenues, budgets and employees in the last fiscal year.

Annual revenue: [redacted]  
Annual R&D budget: [redacted]  
Total number of employees in Canada: [redacted]  
Total number of R&D scientist and technicians: [redacted]  
Total number of R&D staff with PhD's: [redacted]  
Number of FTE's hired: [redacted]

**20a. Has your organization experienced growth in any of the following areas throughout the course of the project?**

- Annual Revenue
- Annual R&D Budget
- Total number of employees in Canada
- Total number of R&D scientists and technicians
- Total number of R&D staff with PhD's
- None of the above
- Don't know

**20b. Based on your responses to the previous question, to what extent can growth in your organization be attributed to your participation in the project?**

*1 is not at all 7 is to a great extent*

	1	2	3	4	5	6	7
Annual revenues	[redacted]						
Annual R&D budget	[redacted]						
Number of employees in Canada	[redacted]						
Number of R&D scientists and technicians	[redacted]						
Number of R&D staff with PhD's	[redacted]						



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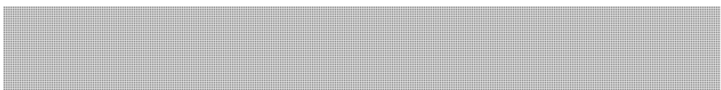


**Additional Feedback**

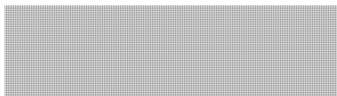
21. If you have any further comments about the project and/or your experience with NSERC's funding opportunities, please provide them below.



21b. Can you provide a statement about your experience that NSERC could use to communicate the impact of these grants? Or, select the checkbox to indicate that we have your permission to use your statements from the above section.



22. Would you like to provide any additional feedback on the online Partner Final Report design, content, relevance and time to complete in this field. Thank you





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Canada



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Turcotte, Lyne

**From:** [redacted]  
**Sent:** Tuesday, October 31, 2017 1:36 PM  
**To:** [redacted] Terfa Dibaba, Talile  
**Cc:**  
**Subject:** Re: NSERC CRDPJ 509801-17  
**Attachments:** HF2016060010A3\_1\_Amendment U Western Ontario\_October 27, 2017.pdf

Dear [redacted]

We are pleased to provide the required signed amendment, attached for your records in connection with Dr. Wang's NSERC CRD grant.

I look forward to hearing from you.

Kind regards,

[redacted]

[redacted]  
[redacted]  
Research Development & Services  
Western University  
SSB 5150, London ON N6G 1G9

T. 519-661-2111 (x. [redacted])

E. [redacted]

<http://www.uwo.ca/research/services/contract.html>



On Oct 13, 2017, at 3:03 PM, Terfa Dibaba, Talile <[TerfaDibaba@nserc-crsng.gc.ca](mailto:TerfaDibaba@nserc-crsng.gc.ca)> wrote:

Good afternoon [redacted]

[redacted] is no longer at NSERC. For the time being Mr. Christian Chouinard is the File Manager assigned to this project. By this email I will forward your request to him.

Kind regards,

Talile Terfa Dibaba

**Talile Terfa Dibaba**

**Program Assistant | Adjointe de programme**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

[Talile.TerfaDibaba@NSERC-CRSNG.GC.CA](mailto:Talile.TerfaDibaba@NSERC-CRSNG.GC.CA)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-943-8744

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Friday, October 13, 2017 2:18 PM  
**To:** Haley, Jennifer  
**Cc:** [redacted] Terfa Dibaba, Talile  
**Subject:** Re: NSERC CRDPJ 509801-17

Dear Jennifer,

[Large redacted block]

Kind regards,

[Redacted signature block]

Research Development & Services  
Western University  
SSB 5150, London ON N6G 1G9

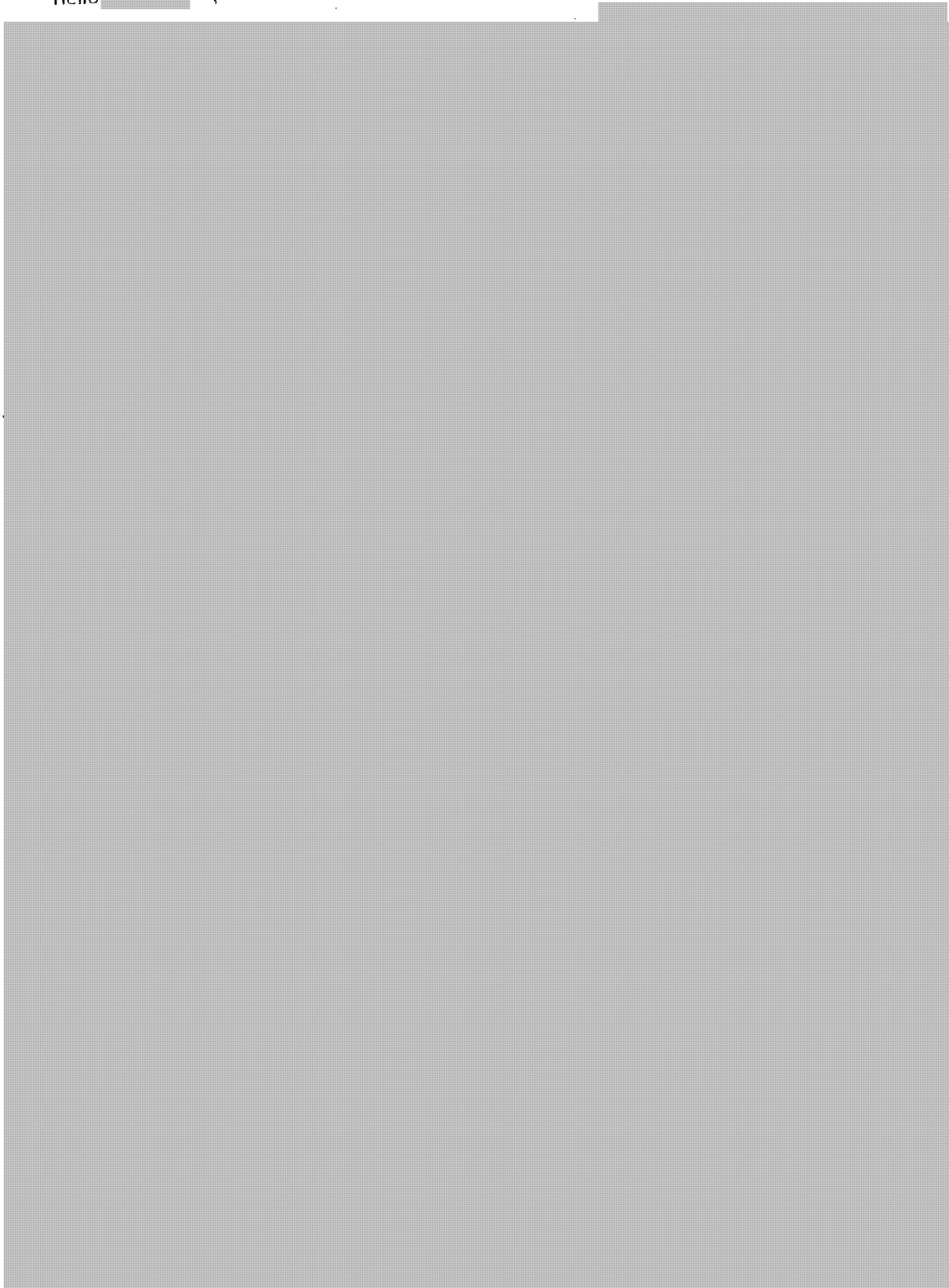
T. 519-661-2111 (x. [redacted])  
E. [redacted]

<http://www.uwo.ca/research/services/contract.html>

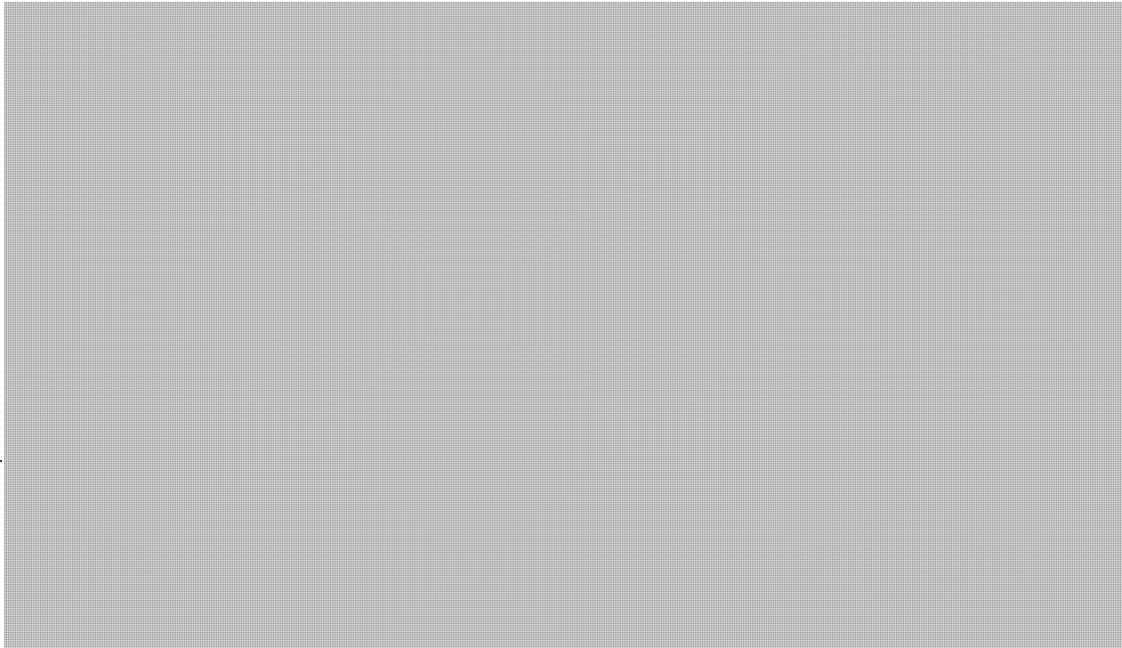
<image001.gif>

On Sep 5, 2017, at 12:56 PM, Haley, Jennifer <[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)> wrote:

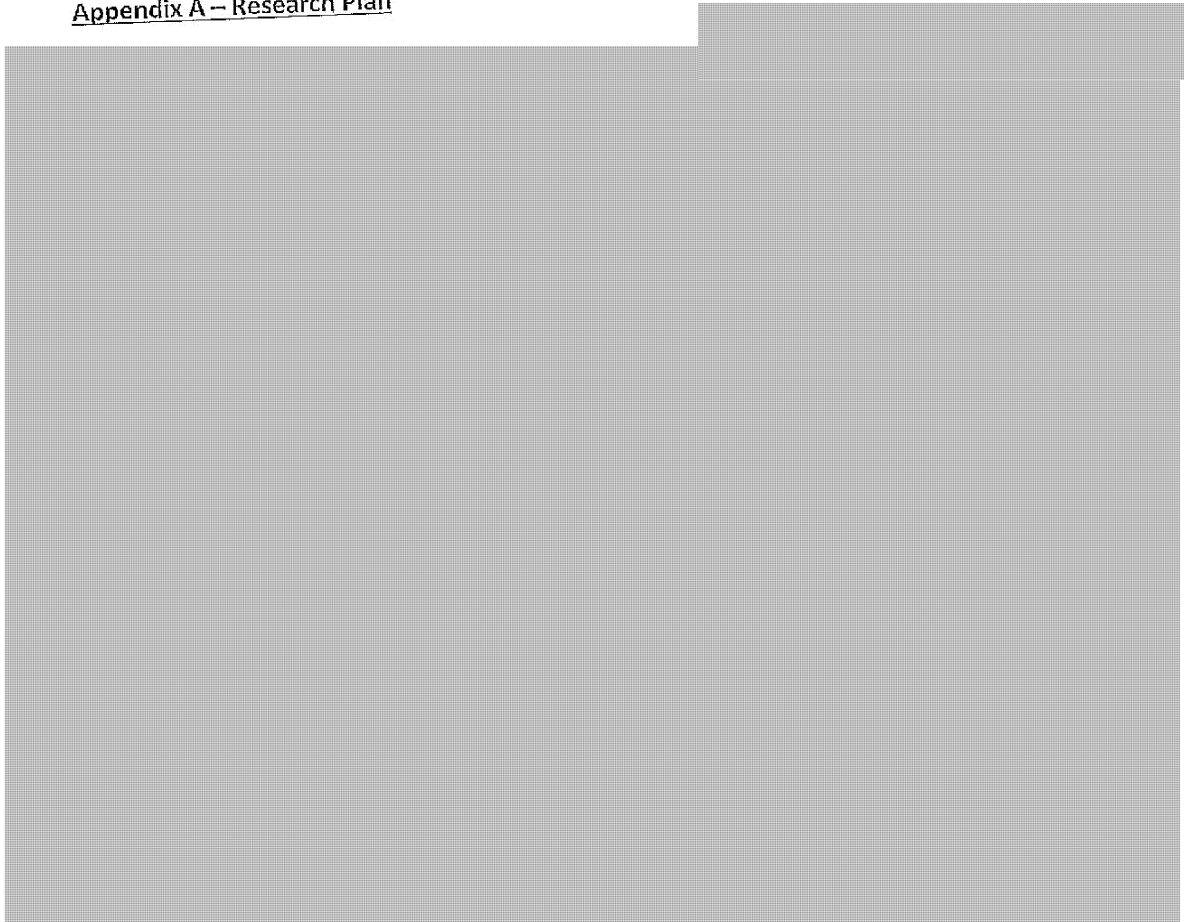
Hello [REDACTED]







Appendix A – Research Plan

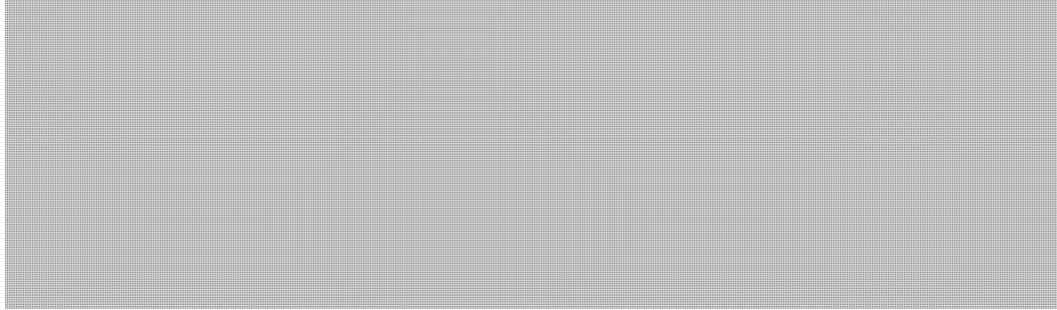


Best regards,

Jennifer

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Thursday, August 31, 2017 9:37 AM  
**To:** Haley, Jennifer  
**Cc:** [redacted]  
**Subject:** RE: NSERC CRDPJ 509801-17

Dear Jennifer,



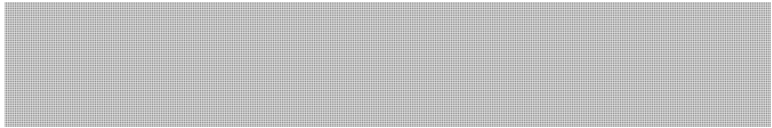
Many thanks again for your assistance!

[redacted]  
[redacted]  
Department of Electrical and Computer Engineering  
The University of Western Ontario  
London, Ontario CANADA N6A 5B9  
Tel: 519-661 2111 Ext. [redacted]  
Fax: 519-850 2436  
Email: [redacted]  
URL: [redacted]

**From:** [redacted]  
**Sent:** Thursday, August 17, 2017 10:54 AM  
**To:** Haley, Jennifer <[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)>  
**Subject:** RE: NSERC CRDPJ-509801-17

Dear Jennifer,

Many thanks for the message.



[redacted]  
**From:** Haley, Jennifer [mailto:[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)]  
**Sent:** Wednesday, August 16, 2017 2:04 PM

To: [redacted] <[redacted]>  
Subject: NSERC CRDPJ 509801-17

Hello [redacted]

I hope that this e-mail finds you well. [redacted]

[redacted]

Please do not hesitate to contact me if you need any further assistance.

Best regards,

Jennifer

----

**Jennifer Haley, M.Sc**

**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)

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<Amendment 1 to HF2016060010A3.docx>

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**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 512**

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**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 516**

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naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

## Terms and Conditions of Award Grant Summary

**File:** CRDPJ 509801 - 17

**Project Title:** Situation-aware and adaptive physical layer designs for highly efficient Wi-Fi (hew) in iot communications

**Grantee:** X. Wang, Electrical and Computer Engineering, Western Ontario

**Industry Partners:** [REDACTED] Huawei Technologies Canada

**Project Start Date:** 2017/10/01      **Project End Date:** 2018/09/30

**Report Due Date:** Final Report      2018/11/30

### Amount of Award:

1/1      \$96,000      2017/10/01

### Industrial Contribution:

CASH

IN KIND



Christian Chouinard  
Manager  
Research Partnerships

Telephone (613) 995-8124  
Fax (613) 992-5337  
E-mail: [Christian.Chouinard@nserc-crsng.gc.ca](mailto:Christian.Chouinard@nserc-crsng.gc.ca)

## TERMS AND CONDITIONS OF AWARD

### Collaborative Research & Development Grants

#### 1. Introduction

The Terms & Conditions for a Research Partnerships (RP) grant is a statement that establishes the responsibilities of each party in the collaboration and highlights important policies affecting the grant.

By drawing on the funds provided through this award, you (the "grantee" or "co-grantee", collectively referred to as the "grantees") confirm that, during the tenure of this grant/award, you and the co-grantee(s) will comply with the following terms and conditions. You will insure that the terms and conditions of this award are known and understood by the industry partners and/or other participating organizations (collectively referred to as "the supporting organizations"). In addition, the grantees acknowledge their obligation to cooperate in working towards a successful outcome and to meeting their reporting and financial obligations.

#### 2. General

1. **You will use grant funds (including financial contributions from both NSERC and the industry partners) only for the specific purposes for which they were awarded.** Grant funds may not be used for items not approved, or for unauthorized purposes such as indirect costs of research.
2. You will provide true, complete, accurate information in any documents related to your grant/award, and you will represent yourself, your research and your accomplishments in a manner consistent with the norms of the relevant field
3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
5. You are not currently ineligible to apply for and/or hold funds from NSERC, the Social Sciences and Humanities Research Council (SSHRC), or the Canadian Institutes of Health Research (CIHR), or any other research or research funding organization worldwide for reasons of breach of policies on responsible conduct of research, such as ethics, integrity or financial management policies. If at any time you become ineligible for any of these reasons, you will advise your institutional officials and NSERC immediately, in writing.
6. You will comply with the Tri-Agency Framework: Responsible Conduct of Research, which includes but is not limited to the Tri-Agency Financial Administration Guide, the Program Guide for Professors, and the Tri-Agency Research Integrity Policy, and with any amendments to these that NSERC may adopt.
7. If you are or have been (at any time during the past 12 months) a federal public servant; you have complied with and will continue to respect the Values and Ethics Code for the Public Sector.



8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
9. In the event of any change in your eligibility status, you will inform NSERC and your institutional officials immediately, in writing.
10. You will inform institutional officials of any changes in the nature of the research that may have an impact on certification or approvals as in section 2.4 Agency Requirements for Certain Types of Research of the Tri-Agency Framework: Responsible Conduct of Research.
11. You will inform NSERC and your institutional officials of any changes in the nature of the research that may require an environmental review/assessment or involves the use of human pluripotent stem cells. You will not proceed with these research activities requiring additional certification until NSERC approval has been obtained.
12. You will inform your institutional officials if your research plan changes to include new activities involving humans or the use of animals. You will not proceed with these research activities until institutional approval has been obtained.

Unless otherwise specified, the policies governing RP awards, including both the NSERC financial contribution and the industry partners' financial contribution are the same as those that apply generally to NSERC awards and to the use of grant funds.

In addition, you understand that:

the Access to Information Act and the Privacy Act (ATIP), and the Use and Disclosure of Personal Information Provided to NSERC, pertain to the information NSERC collects from and about you.

### **3. Duration of the Award**

The duration of the award is indicated by the start and end dates in the Grant Summary. Should circumstances change, adjustments to these dates can be negotiated. A written request for an extension will be considered by NSERC and will be approved if the need for an extension is well justified, and as long as there is agreement with other participants and collaborators.

### **4. Schedule of NSERC Payments**

The approved amount of the grant is given in the Grant Summary.

In order to maximise the management of public funds, NSERC will release annual instalments of awards according to the following schedule:

- up to \$250,000 – one payment
- \$250,001 to \$500,000 – two payments at six month intervals
- \$500,001 to \$1,000,000 – four payments at three month intervals
- \$1,000,001 or more – monthly payments

## **5. Release of Instalments**

The second and subsequent instalments will be released on or about the anniversary of the start date subject to:

- the availability of funds;
- confirmation that the industry partner(s) have met their obligations in providing cash and in-kind support;
- confirmation of continued financial support by the industry partner(s) for the following term;
- satisfactory review of progress;
- demonstrated need for funds.

Depending on the above, the amount of the instalment is negotiable.

NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

## **6. Research Objectives**

The grantees and the collaborators will make every effort to adhere to the approved research plan. NSERC must approve major deviations in the approved plan or research objectives **before** the changes are implemented.

## **7. Interactions Among the Grantees and the Supporting Organizations**

Consistent with the intent of fostering productive research collaborations, the grantees will hold regular discussions with the supporting organizations to exchange information, examine results, review priorities and consider measures to enhance the mutual benefits. NSERC should be informed of any major developments or situations where NSERC staff might be of assistance.

## **8. Progress Reporting and Review**

As indicated in the Grant Summary, or upon request, the grantee will provide a report that describes progress to date and updates the plans for the future conduct of the research; and the resources required to complete the approved work.

Progress reports are requested at a frequency that depends on the size and the total duration of the award:

- all CRD awards are required to provide a final report;
- CRD grants with an awarded value  $\geq$  \$150,000 in the first year or on annual average, are required to provide an annual progress report;
- CRD grants with an awarded value  $\geq$  \$50,000 and  $<$  \$150,000 in the first year or on an annual average are required to provide a progress report near the end of each two year cycle:
  - near the end of year two for three and four year CRD awards;
  - near the end of year two and year four for five year CRD awards.
- at the end of year two and subsequent, where a progress report is not required, a confirmation of the continuing collaboration with the industry partners, receipt of the

industry partner's contributions and the need for funds (grant account balance) will be requested from the grantee and the Institution;

- CRD grants with an award value < \$50,000 in the first year or on an annual average will not be required to provide a progress report.

NSERC will send reminders that a progress report or other information is due, and will provide guidelines on the items to be addressed.

At its discretion, NSERC may require a progress report when one is not normally required.

## 9. Budgets

**Some latitude is allowed in adherence to planned expenditures, however; NSERC must approve the reallocation of resources of more than 20% of an approved budget item in advance.** (e.g. The training of highly qualified personnel is an NSERC priority; **any deviations** in the approved training plan must receive prior authorization from NSERC).

NSERC bears no responsibility for expenditures beyond the amount in the grant account.

## 10. Participation of the Industry Partners

Each industry partner agrees to:

- honour its commitment to the project (in cash and/or in kind) as approved;
- provide periodic assessments, as requested by NSERC, to assist in the evaluation of the progress of the research;
- make every effort to use the project results in its Canadian operation and to the benefit of the Canadian economy and Canadians.

## 11. Intellectual Property

The grantee and co-grantees, the universities, and industry partners agree to abide by *NSERC's Policy on Intellectual Property* ([http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi\\_eng.pdf](http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi_eng.pdf)). *NSERC's Policy on Intellectual Property* (IP) supports the premise that every effort should be made to exploit the results of NSERC-funded research in Canada, for the benefit of Canadians. As a condition of accepting an award, NSERC grantees agree to disclose to their institutions any IP with commercial potential arising from the award should they decide to pursue commercialization. If you disclose any potential IP arising from the research, you and the institution will endeavor to obtain the greatest possible economic benefit to Canada from the resulting commercial activity. This requirement for disclosure is not intended to supersede the IP ownership policy that the institution might already have in place.

## 12. Change of Status – Grantees

The grantee and/or the university will inform NSERC immediately of significant changes in the status of the grantee and/or the co-grantees such as taking a sabbatical, or other leave, or upon permanent departure from the university.

## 13. Change of Status – Industry Partners

The grantee will notify NSERC immediately of any change in status of the industry partners in the grant. These changes could include any or all of the following:

- contact name at the organization;
- buyouts, change of ownership and subsequent name change of the organization;
- withdrawal or adjustment of cash and/or in-kind support;
- new organizations participating.

Depending on the change, a new Form 183A (Information Required from Organizations Participating in Research Partnerships) may have to be completed including a letter of support (<http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/183A/e.asp>).

#### **14. Termination of Support**

NSERC reserves the right to terminate support at any point:

- should progress be found to be unsatisfactory;
- if the support of the industry partner(s) falls to a level substantially less than the amount stated in the Grant Summary, or is withdrawn entirely and a suitable replacement cannot be found;
- for other issues that may arise.

In the event of early termination of an award, NSERC will negotiate an orderly phase-out of the project or program to ensure minimal disruption especially for any HQP in training. However, in cases where there is an allegation of a breach of NSERC policy, or a confirmed breach, the Tri-Agency Framework: Responsible Conduct of Research applies.

#### **15. Public Announcements and Acknowledgement of NSERC Support**

NSERC normally makes a decision on the need for an official public announcement of competition results. Your institution must refrain from making any announcements until this takes place. All announcements of awards must be made in adherence to the <http://www.science.gc.ca/default.asp?lang=En&n=711200B1-1> (also see relevant sections of the <http://www.science.gc.ca/default.asp?lang=En&n=56B87BE5-1>

Funding recipients may be asked to take part in NSERC's public announcement. This does not prevent you from confidentially sharing information about your funding with your collaborators or referring to NSERC funding in applications for other funding. If you foresee any issues or concerns arising from this condition, please contact NSERC.

By drawing on the funds provided through this award, the grantees agree that in all communications relating to the research, or research results, they will acknowledge NSERC support and the support of the participating Canadian Government department and/or agencies.

### **16 Consent to Disclosure of Personal Information:**

You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

**Note:** If you have any concerns about your ability to comply with the terms and conditions listed above, contact your institutional official or NSERC staff responsible for the program immediately. Do not agree to the terms and conditions and do not draw down on any funds paid to you or to the host institution until you are certain that you can and will comply with all of the requirements.

**Natural Sciences and Engineering Research Council  
RECOMMENDATION FOR EXECUTIVE APPROVAL**

**Collaborative Research and Development Grants - Project (CRDPJ)  
New Proposal**

**Title:** Image/video restoration in ill lighting conditions  
**Applicant:** Dr. Xiaolin Wu, Electrical and Computer Engineering, McMaster  
**PIN:** [REDACTED]  
**With:** Huawei Technologies Canada (Huawei Canada)  
**Application:** CRDPJ 517550 - 17

**Overview of the Proposal**

This is a 3-year CRD application requesting [REDACTED] from NSERC. The industry partner is Huawei Canada; they are contributing [REDACTED]

Huawei Canada is a provider of service-driven distributed cloud data center solutions. Huawei Canada was incorporate in 2008 and is a subsidiary of the multinational Huawei Technologies. There are [REDACTED] Canadian employees including [REDACTED] R&D staff and research expenditures that are expected to be [REDACTED] this year.


The proposed research will work on advanced algorithms to restore and enhance images/videos acquired in poor light and adverse conditions. [REDACTED]

*On balance, the recommendation is to fund the project.*

Reviewers			
#	Name, Title, affiliation, expertise		
1	[REDACTED]		
2	[REDACTED]		
3	[REDACTED]		
4	[REDACTED]		
Environmental Assessment	<input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Submitted to Secretariat Date: _____	<input type="checkbox"/> Cleared Date: _____
IP Agreement	<input type="checkbox"/> Not applicable (open dissemination)	<input type="checkbox"/> Required	<input checked="" type="checkbox"/> In place & meets guidelines





I recommend funding this proposal at the level requested as shown in the table below.

A signed Research Agreement that meets the NSERC Policy requirements on IP was included with the proposal; the agreement covers the duration of the NSERC grant.

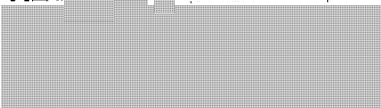
<input checked="" type="checkbox"/> Recommended for funding as requested	
<input type="checkbox"/> Recommended for funding at a reduced level	
<input checked="" type="checkbox"/> Condition to release funds:	
	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Not recommended for funding	

*AW*

**Amounts requested and recommended**

Year	Original Amounts Requested	Industrial Cash	Industrial In-kind (Total)	Industrial In-kind (Eligible)	Amounts Recommended
1					
2					
3					
Totals					

RECOMMENDED:



*ARI  
1/15*

15 January 2018  
Date

Sylvia Williams,  
Senior Program Officer

RECOMMENDED/APPROVED IN  
ACCORDANCE WITH SECTIONS 32  
AND 34 OF THE FAA



COMMENTS:

15 January 2018  
Date

Alexia Benoit  
Deputy Director,  
Research Partnerships

## IP Checklist

X. Wang 509801 - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

Update the internal tab in Namis and place original IP checklist on file

  
Christian Choumard  
Manager

*20/10/2007*  
Date

Start Date:



Turcotte, Lyne

---

**From:** [redacted]  
**Sent:** Friday, October 20, 2017 4:02 PM  
**To:** Chouinard, Christian  
**Cc:** Turcotte, Lyne; [redacted]  
**Subject:** RE: NSERC CRDPJ 509801-17

Dear Christian,

Many thanks for the prompt confirmation.

Have a great weekend,

[redacted]

---

**From:** Chouinard, Christian [mailto:Christian.Chouinard@nserc-crsng.gc.ca]  
**Sent:** Friday, October 20, 2017 3:48 PM  
**To:** [redacted]  
**Cc:** Turcotte, Lyne <Lyne.Turcotte@nserc-crsng.gc.ca>; [redacted]  
**Subject:** RE: NSERC CRDPJ 509801-17

Dear [redacted]

[redacted]

Best regards,  
Christian

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** October-20-17 3:22 PM  
**To:** Chouinard, Christian  
**Cc:** Turcotte, Lyne; [redacted]  
**Subject:** RE: NSERC CRDPJ 509801-17

Dear Christian,

Many thanks for your time in reviewing the amendment.

[redacted]

Thanks again and cheers,

[redacted]

---

**From:** Chouinard, Christian [mailto:Christian.Chouinard@nserc-crsng.gc.ca]  
**Sent:** Friday, October 20, 2017 2:40 PM  
**To:** [redacted]

s.20(1)  
s.20(1)(b)  
s.20(1)(c)

Cc: Turcotte, Lyne <Lyne.Turcotte@nserc-crsng.gc.ca>; [REDACTED]  
Subject: RE: NSERC CRDPJ 509801-17

Dear [REDACTED]

[REDACTED]

Should you have any questions or concerns, please do not hesitate to contact me.

Best regards,  
Christian

**Christian Chouinard, PhD**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

[christian.chouinard@nserc-crsng.gc.ca](mailto:christian.chouinard@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-995-8124

Facsimile | Télécopieur | 613-992-5337

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

---

**From:** Terfa Dibaba, Talile

**Sent:** October-13-17 3:03 PM

**To:** [REDACTED]

**Cc:** [REDACTED] Chouinard, Christian; Turcotte, Lyne

Duplicate email / Courriel en double

**Subject:** FW: NSERC CRDPJ 509801-17

Good afternoon [REDACTED]

[REDACTED] is no longer at NSERC. For the time being Mr. Christian Chouinard is the File Manager assigned to this project. By this email I will forward your request to him.

Kind regards,

Talile Terfa Dibaba

**Talile Terfa Dibaba**

**Program Assistant | Adjointe de programme**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

[christian.chouinard@nserc-crsng.gc.ca](mailto:christian.chouinard@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-995-8124

Facsimile | Télécopieur | 613-992-5337

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

**From:** Terfa Dibaba, Talile

**Sent:** October-13-17 3:03 PM

**To:** [Redacted] Turcotte, Lyne

**Subject:** FW: NSERC CRDPJ 509801-17

Good afternoon Caroline,

[Redacted] is no longer at NSERC. For the time being Mr. Christian Chouinard is the File Manager assigned to this project. By this email I will forward your request to him.

Kind regards,

Talile Terfa Dibaba

**Talile Terfa Dibaba**

**Program Assistant | Adjointe de programme**

Manufacturing, Communications and Technologies Division | Division de la Fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

[Talile.TerfaDibaba@NSERC-CRSNG.GC.CA](mailto:Talile.TerfaDibaba@NSERC-CRSNG.GC.CA)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-943-8744

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)

**From:** [Redacted]

**Sent:** Friday, October 13, 2017 2:18 PM

**To:** Haley, Jennifer

**Cc:** [Redacted] Terfa Dibaba, Talile

**Subject:** Re: NSERC CRDPJ 509801-17

Dear Jennifer,

[Redacted]

## IP Checklist

X. Wu 517550 - 17

IP Agreement not required

### IP Agreement Mandatory Elements

Mandatory Element	
1. Timely exploitation – only for exclusive license or assignment	
2. Protect IP Assets of Partners	
> Background IP	
> Review of publications for partner's confidential information	
3. Maximum of 6 month publication delay	
4. No delay of student thesis defence	
5. License back to institution/researchers for non-commercial purposes	

S.2.

### Type of Access

Unrestricted dissemination	
Non-exclusive licensing	
Non-exclusive licensing with option for negotiating exclusive license	
Exclusive license	
Joint ownership	
Partial assignment of ownership	
Full assignment of ownership	

S.2.

Update the internal tab in Namis and place original IP checklist on file

  
Sylvia Williams  
Senior Program Officer

2018/01/15

Date

**Haley Jennifer**

---

**From:** [Redacted] <[Redacted]>  
**Sent:** Tuesday, September 05, 2017 1:37 PM  
**To:** Haley, Jennifer  
**Cc:** [Redacted]; Terfa Dibaba, Talile [Redacted]  
**Subject:** RE: NSERC CRDPJ 509801-17

Dear Jennifer,

[Redacted]

Thanks again and best regards,

[Redacted]

**From:** Haley, Jennifer [mailto:Jennifer.Haley@nserc-crsng.gc.ca]  
**Sent:** Tuesday, September 5, 2017 12:56 PM  
**To:** [Redacted]  
**Cc:** [Redacted]; Terfa Dibaba, Talile <Talile.TerfaDibaba@nserc-crsng.gc.ca>  
**Subject:** RE: NSERC CRDPJ 509801-17

Duplicate email / Courriel en double

Hello [Redacted]

[Redacted]

**Pages 924 to / à 940  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 941**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 942**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Pages 943 to / à 944**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**  
  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

**Pages 945 to / à 946  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 947**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 948 to / à 949  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 950 to / à 952**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**  
  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

**Pages 953 to / à 963  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 964**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Page 965**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**13(1)(c), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**





<b>6. Budget</b>

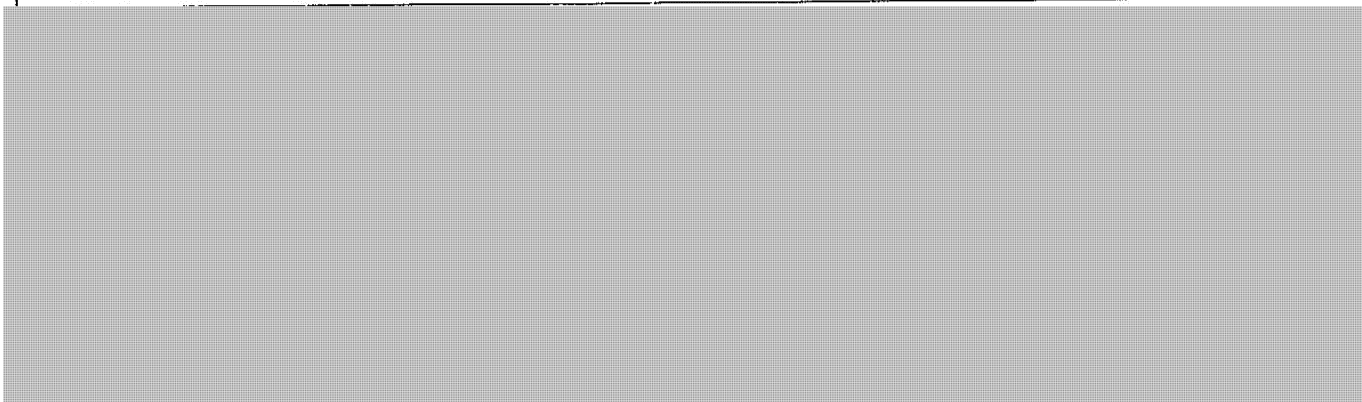
<b>7. Other Considerations / Autres points à considérer</b>

<b>Recommendation / Recommandation:</b>	
On the balance of its strengths and weaknesses, would you recommend funding this proposal? Compte tenu des forces et faiblesses, recommandez-vous le financement de cette demande ?	
<b>Yes / Oui</b>	as requested / tel que demandé
<b>No / Non</b>	Please summarize the reason(s) below / Veuillez résumer la(les) raison(s) ci-dessous
<b>Specify / Spécifier</b>	

Personal Identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant Wu
--	--------------------------------

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



**Xiaolin Wu**

**Form 101 - Application for a Grant**

**Intellectual Property - Attachment**

**IP agreement**



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5

s.19(1)  
s.20(1)(b)  
s.20(1)(c)

August 15, 2017

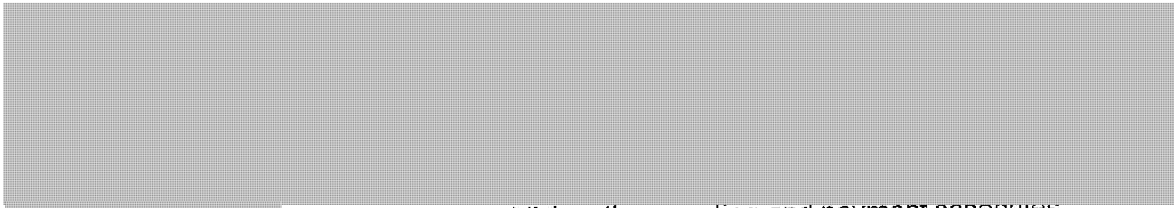
File: CRDPJ 509801 - 17

Dr. X. Wang  
Dept. of Electrical and Computer Eng.  
University of Western Ontario  
THOMPSON ENGINEERING BLDG RM [REDACTED]  
1151 RICHMOND ST  
LONDON ON N6A 5B9

Dear Dr. Wang:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Situation-aware and adaptive physical layer designs for highly efficient Wi-Fi (hew) in iot communications", with Huawei Technologies Canada**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Western Ontario.



The start date establishes the reporting and payment schedules.

**The requested IP agreement must cover, at a minimum, the entire duration of the NSERC project.**

I enclose for your information copies of the reviews solicited on behalf of your application and the NSERC guidelines for External Reviewers. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act.

Please inform NSERC if you wish to receive a copy of these documents in the other official language.

The cash commitments of NSERC and the industrial sponsors to this project are summarized below.

	Original Amount Requested	Industrial Cash	Industrial In-kind	Amount Recommended
Year 1	[REDACTED]	[REDACTED]	[REDACTED]	\$96,000
TOTAL	[REDACTED]	[REDACTED]	[REDACTED]	\$96,000

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any further assistance.

Sincerely,

[Redacted signature block]

Jennifer Haley M.Sc  
Manager  
Research Partnerships

Telephone: 613-943-8747  
Fax: 613-992-5337  
Jennifer.Haley@nserc-crsng.gc.ca

JH/ttd

Enclosure

cc: [Redacted] Research, Western Ontario  
Huawei Technologies Canada

Natural Sciences and Engineering Research Council

RECOMMENDATION FOR EXECUTIVE APPROVAL

Collaborative Research and Development Grants - Project (CRDPJ)

New Proposal

**Title:** Situation-aware and adaptive physical layer designs for highly efficient Wi-Fi (hew) in iot communications

**Applicant:** Dr. Xianbin Wang, Professor, Department of Electrical and Computer Engineering, University of Western Ontario  
**PIN:** [REDACTED]

**With:** Huawei Technologies Canada

**Application:** CRDPJ 509801 - 17

**Overview of the Proposal**

This is a one year CRD application requesting [REDACTED] from NSERC, leveraging [REDACTED] in cash and [REDACTED] in eligible in-kind contributions from Huawei Technologies Canada.

The proposed research is to develop critical physical layer techniques for the next generation Wi-Fi network in meeting the key requirements of Internet of Things (IoT) applications. Specifically, the research focuses on the reduction of power consumption of IoT devices, extension of communications range through adaptive beamformed transmission, and integration with the latest IEEE 802.11ax while maintaining backward compatibility.

The research is expected to help the Canadian information and communication technology (ICT) industries develop battery efficient and low cost Wi-Fi based IoT devices, which will directly benefit the Internet and IoT enabled economy.

The application was sent to four external reviewers, one industry representative <sup>from</sup> the United States of America and three Canadian University Professors. [REDACTED]

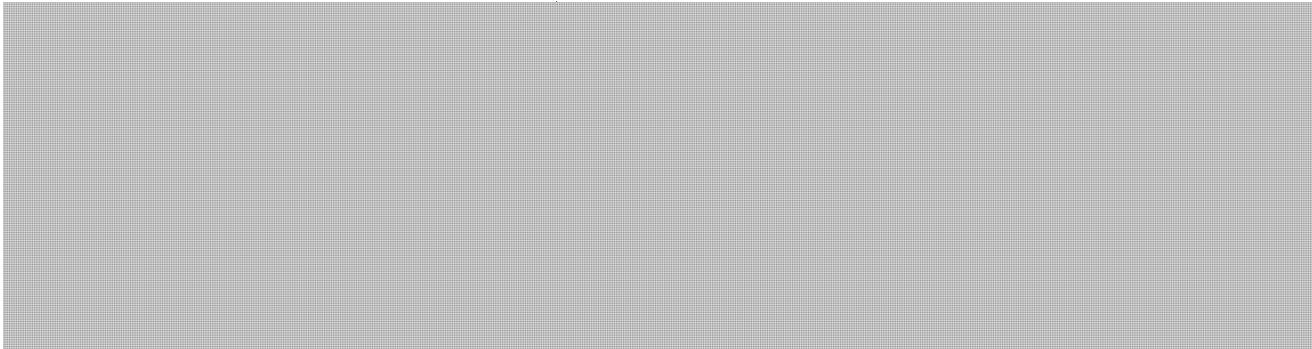
Reviewers	
#	Name, Title, affiliation, expertise
1	[Redacted]
2	
3	
4	

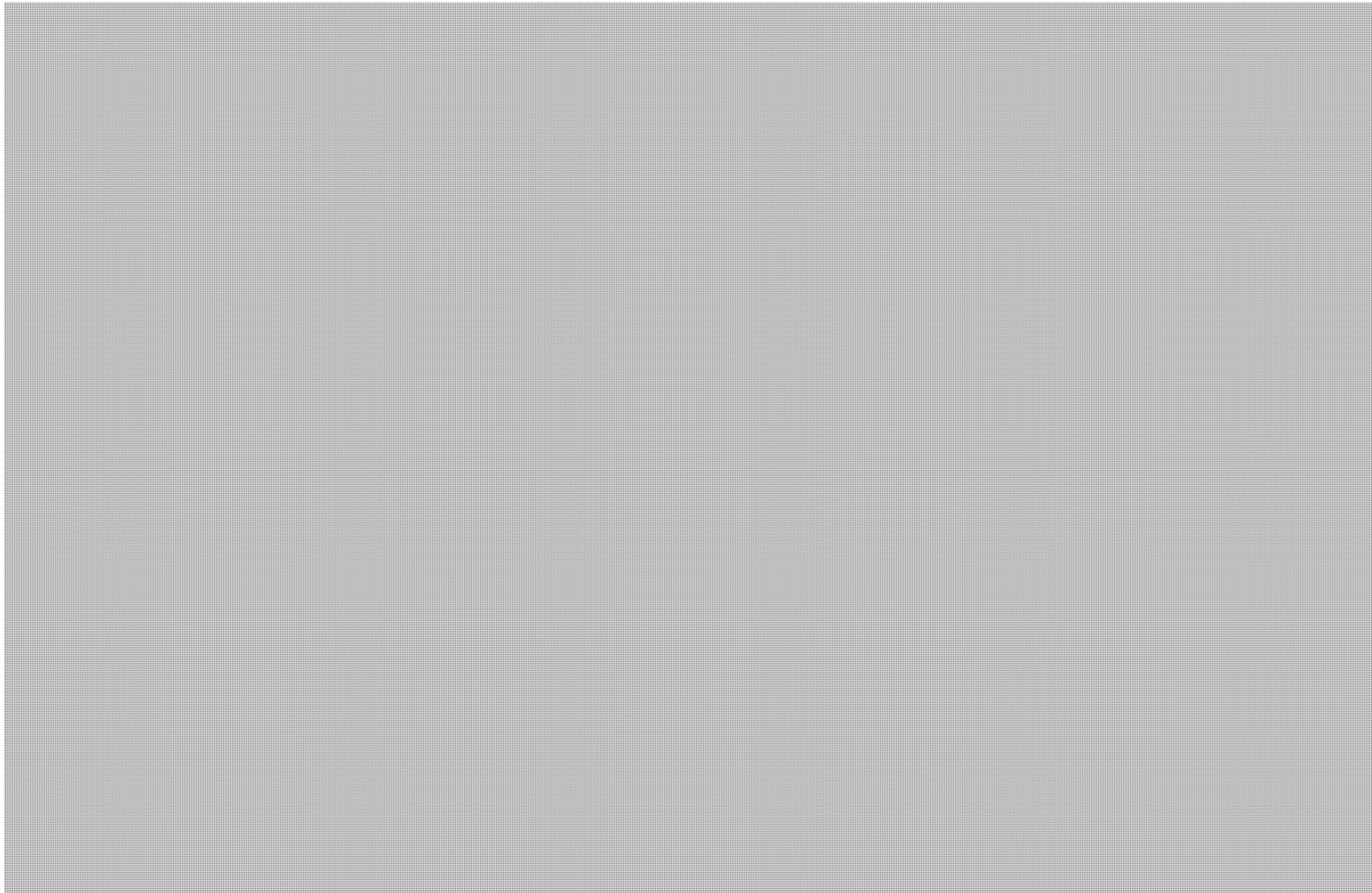
Environmental Assessment	<input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Submitted to Secretariat Date:	<input type="checkbox"/> Cleared Date:
IP Agreement	<input type="checkbox"/> Not applicable (open dissemination)	<input checked="" type="checkbox"/> Required	<input type="checkbox"/> In place & meets guidelines
Comments (if applicable)			

<b>Competence of the research team</b>	Meets	<input checked="" type="checkbox"/>
	Does not meet	<input type="checkbox"/>

Dr. Xianbin Wang is a Professor in the department of Electrical and Computer Engineering at Western University and is a Canada Research Chair in Wireless Communications. He has 9 years of industrial development experiences on DSL, Ethernet chipsets, and DSP prototypes before he joined Western University in 2008.

Dr. Wang has received research funding from various sources in the past. He currently holds funding from NSERC (Create, Discovery, DPP, CRD, and Strategic Project) as well as a Government of Canada Research Chair, DRDC CSSP, and an industry contract. In the past six years he has published 68 journal articles, had 105 articles in peer-reviewed conference proceedings, written 15 technical reports, has 8 patents granted/pending, and has contributed to the training of 107 HQP.





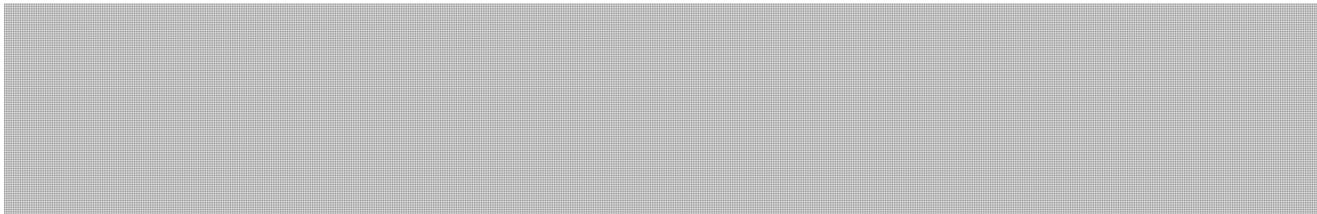
<b>Scientific Merit and Technical Feasibility</b>	Meets
	Does not meet

The main objective of the proposed project is to develop critical physical layer technique for the next generation Wi-Fi network. The key technical challenges are:

- i. Stringent requirements on battery life of IoT devices
- ii. Diverse IoT operation environment and application requirements
- iii. Wi-Fi Access Point (AP) transmission range and cost
- iv. Interoperability, Backward compatibility and co-existence.

The proposed research will tackle these technical challenges under the following research themes:

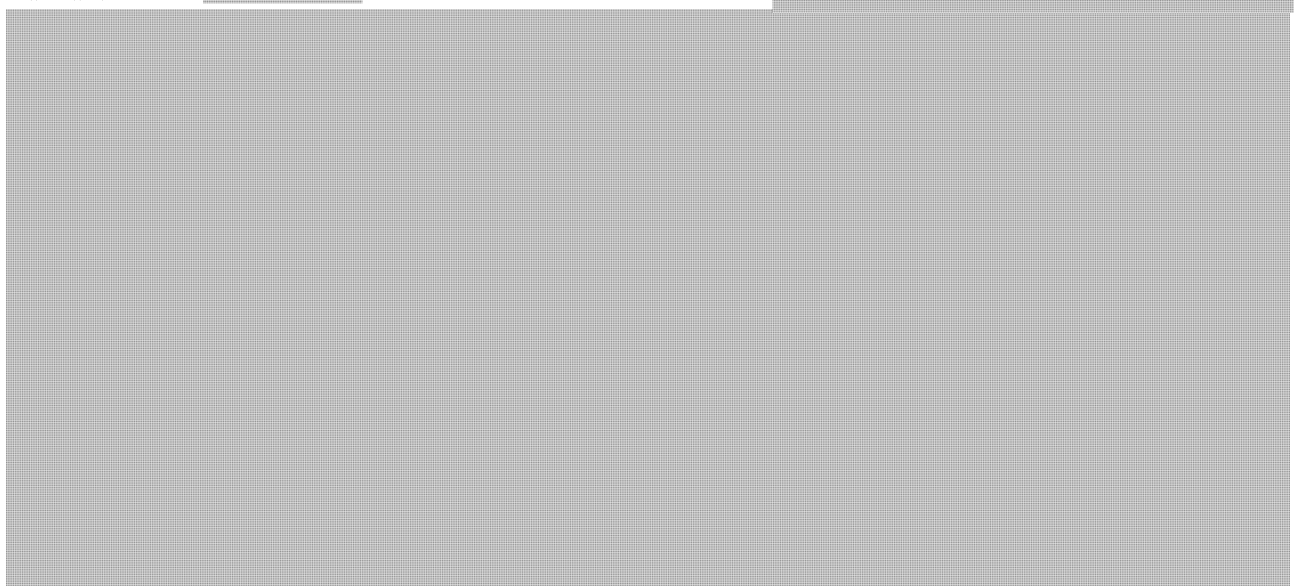
- i. Joint design of adaptive beamforming and modulation at access point for improved battery life and transmission reach of IoT devices.
- ii. Situation-aware scheduling and beamforming
- iii. Interoperability, backward compatibility and co-existence.







<b>Training Opportunities</b>	Meets		
	Does not meet		
<b>Undergrads</b>	<b>MSc.</b>	<b>PhD</b>	<b>PDF</b>

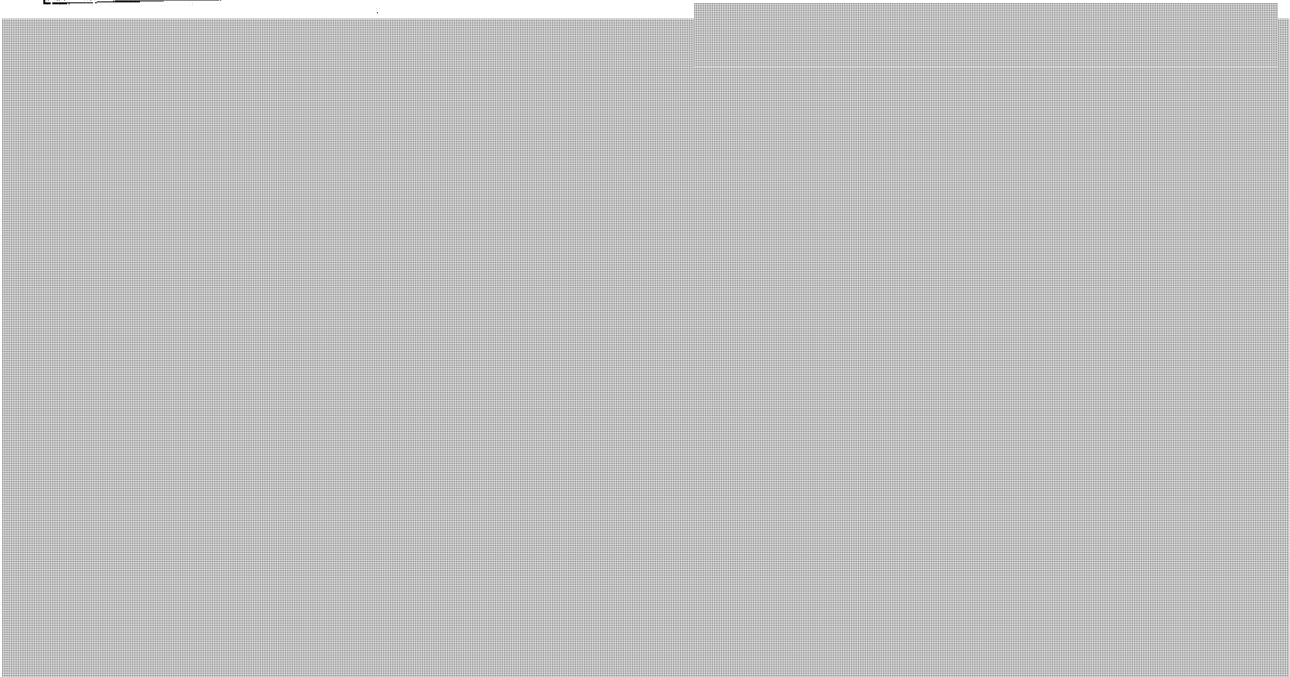


<b>Industrial Partner(s), Relevance and Benefits</b>	Meets
	Does not meet

Huawei Technologies Co., Ltd. (Huawei) is a networking and telecommunications equipment supplier. Established in 1998, Huawei has within a short period of time become the world's leading company in the mobile equipment industry. Huawei established the Huawei Canada Research Centre and in the last six years has built one of the strongest R&D teams in the information and communication technologies sector in the world.



<b>Benefit to Canada</b>	Meets
	Does not meet



s.19(1)  
s.20(1)(b)  
s.20(1)(c)  
s.21(1)(a)

<b>Budget</b>		Meets	
		Does not meet	
Duration (years)	1	<b>Budget items:</b>	
Total request		Students salaries	
Year 1 request		PDF salaries	
Average request		Project Manager salary	
Total partner cash		Other salaries	
Total partner eligible in-kind		Equip. & facilities	
Cash leverage ratio		Material & supplies	
Cash & IK leverage ratio		Travel	
Funds not leveraged		Dissemination	
Total cost of the research		Tech. transfer activities	

[Redacted content]

**Conclusion and Recommendation**

[Redacted content]

<input checked="" type="checkbox"/> Recommended for funding as requested
<input type="checkbox"/> Recommended for funding at a reduced level
<input checked="" type="checkbox"/> Condition to release funds: [REDACTED]
<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Not recommended for funding

**Amounts requested and recommended**

Year	Original Amounts Requested	Revised Amounts Requested	Industrial Cash	Industrial In-kind (Total)	Industrial In-kind (Eligible)	Amounts Recommended
1	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	\$96,000
Totals	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	\$96,000

**RECOMMENDED:**

[REDACTED]  
[REDACTED] enriter ley,  
Manager

10 August 2017  
Date

**RECOMMENDED/APPROVED IN ACCORDANCE WITH SECTIONS 32 AND 34 OF THE FAA**

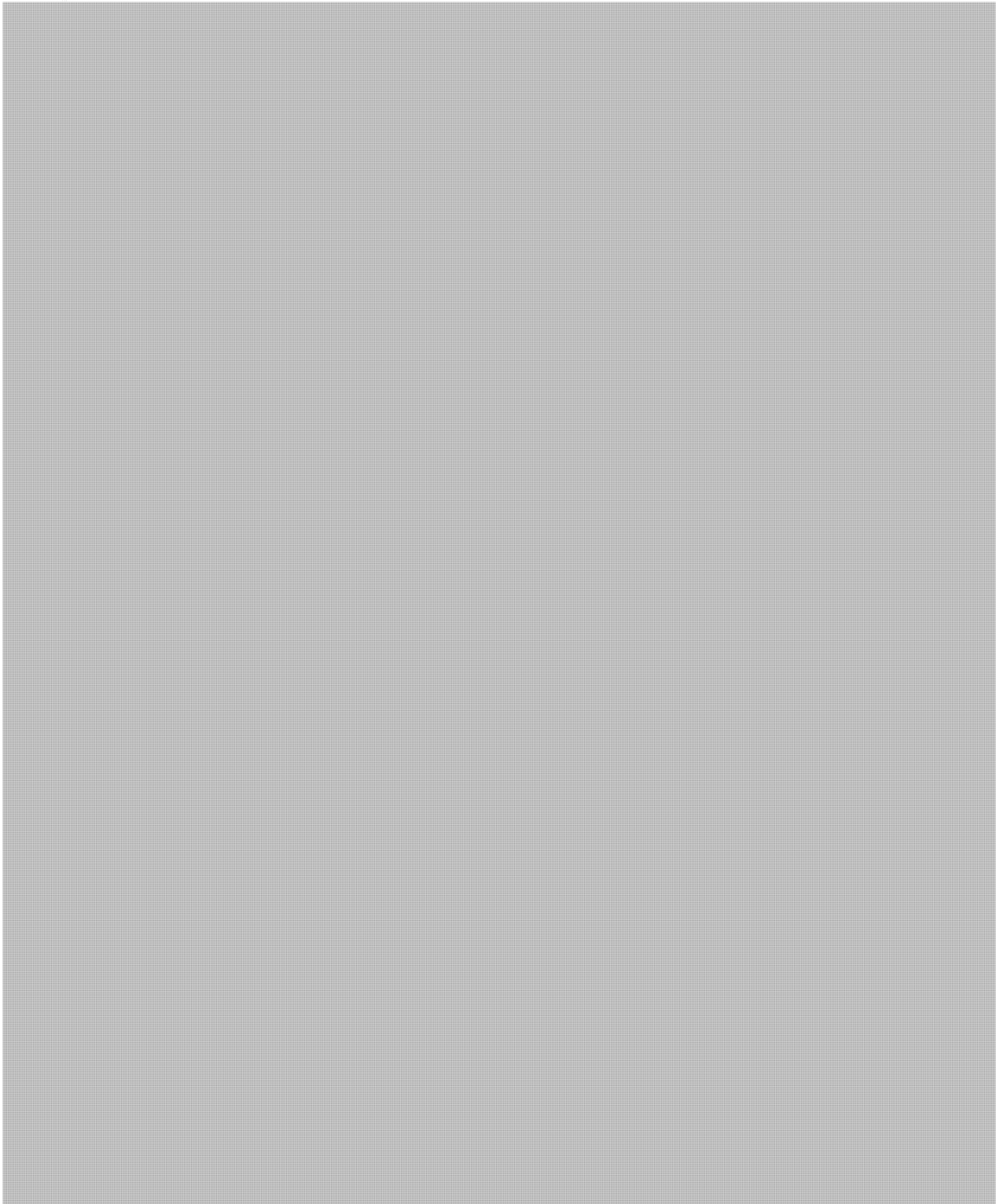
[REDACTED]  
[REDACTED] iela Moss  
ctor  
Research Partnerships

**COMMENTS:**

10 August 2017  
Date

NSERC PIN [REDACTED]

**Situation-Aware and Adaptive Physical Layer Designs for Highly Efficient Wi-Fi (HEW) in IoT Communications**



**Pages 0 to / à 0**  
**are withheld pursuant to sections**  
**sont retenues en vertu des articles**  
  
**13(1)(c), 19(1), 20(1)(b), 20(1)(c)**  
  
**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

**Terfa Dibaba, Talile**

---

**From:** Haley, Jennifer  
**Sent:** Monday, May 15, 2017 12:44 PM  
**To:** Terfa Dibaba, Talile  
**Subject:** FW: NSERC CRDPJ Grant 509801-17 Dr. Wang  
**Attachments:** NSERC\_CRD\_Huawei\_April23\_updated.pdf

Hello Talile,

When you have a chance please add the attached revised proposal to the package for the reviewers.

Thank you so much for your help.

Jennifer

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Monday, May 15, 2017 12:37 PM  
**To:** Haley, Jennifer  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Dear Jennifer,

[redacted]

Thanks again for your assistance!

[redacted]

---

**From:** Haley, Jennifer [mailto:[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)]  
**Sent:** Monday, May 15, 2017 9:17 AM  
**To:** [redacted]  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Good morning [redacted]

Yes please take the time you need. I will wait for your updated proposal.

Thank you so much for your time,

Jennifer

---

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Monday, May 15, 2017 9:04 AM  
**To:** Haley, Jennifer  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Hi Jennifer,

[Redacted]

Thanks again and cheers,

[Redacted]

**From:** Haley, Jennifer [mailto:Jennifer.Haley@nserc-crsng.gc.ca]  
**Sent:** Monday, May 15, 2017 8:11 AM  
**To:** [Redacted]  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Good morning [Redacted]

I hope that this e-mail finds you well.  
clarify.

[Redacted]

[Redacted]

Thank you very much for your time and assistance.

Sincerely,

Jennifer

---

**From:** [Redacted] [mailto:[Redacted]]  
**Sent:** Friday, May 12, 2017 12:25 PM  
**To:** Haley, Jennifer  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Dear Jennifer,

Thank you as well for your timely response.

Have a great weekend,

[Redacted]

---

**From:** Haley, Jennifer [mailto:Jennifer.Haley@nserc-crsng.gc.ca]  
**Sent:** Friday, May 12, 2017 12:23 PM  
**To:** [Redacted]  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang



Hello [redacted]

Thank you so much for your prompt response, it is greatly appreciated.  
[redacted]

Please don't hesitate to contact me if you wish to discuss the proposal.

Thank you for your time and have a great weekend.

Best regards,

Jennifer

**From:** [redacted] [mailto:[redacted]]  
**Sent:** Friday, May 12, 2017 12:17 PM  
**To:** Haley, Jennifer  
**Subject:** RE: NSERC CRDPJ Grant 509801-17 Dr. Wang

Dear Jennifer,

[redacted]

Thanks again for your assistance!

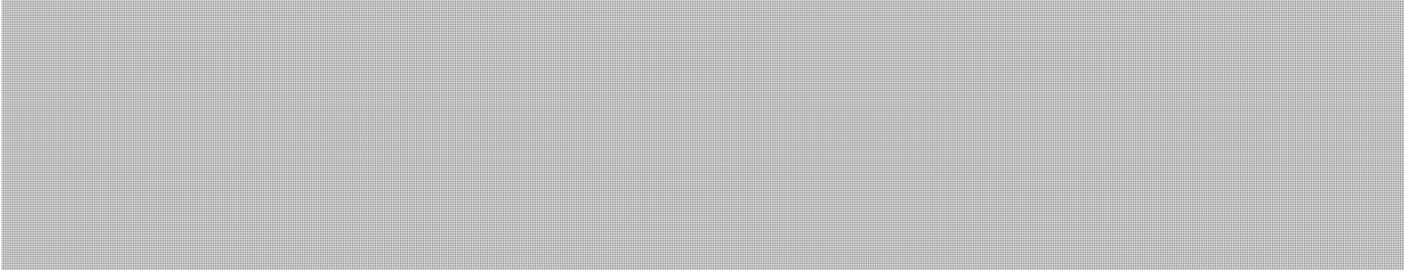
Xianbin

[redacted]  
[redacted]  
Department of Electrical and Computer Engineering  
The University of Western Ontario  
London, Ontario CANADA N6A 5B9  
Tel: 519-661 2111 Ext [redacted]  
Fax: 519-850 2436  
Email [redacted]  
URL: [redacted]

**From:** Haley, Jennifer [mailto:Jennifer.Haley@nserc-crsng.gc.ca]  
**Sent:** Friday, May 12, 2017 12:01 PM  
**To:** [redacted]  
**Subject:** NSERC CRDPJ Grant 509801-17 Dr. Wang

Dear [redacted]

I hope that this e-mail finds you well. I am the file manage who has been assigned to your NSERC CRD application titled "Situation-Aware and Adaptive Physical Layer Designs for Highly Efficient Wi-Fi (HEW) in IoT Communications".



Thank you for your time,

Sincerely,

Jennifer

----

**Jennifer Haley, M.Sc**  
**Manager | Gestionnaire**

Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies

Research Partnerships | Partenariats de recherche

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

---

[Jennifer.Haley@nserc-crsng.gc.ca](mailto:Jennifer.Haley@nserc-crsng.gc.ca)

350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5

Telephone | Téléphone | 613-943-8747

[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca) | [www.crsng-nserc.gc.ca](http://www.crsng-nserc.gc.ca)



Natural Sciences and Engineering  
Research Council of Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

May 12, 2017

File: CRDPJ 509801 - 17

Dr. X. Wang  
Dept. of Electrical and Computer Eng.  
University of Western Ontario  
THOMPSON ENGINEERING BLDG RM 279  
1151 RICHMOND ST  
LONDON ON N6A 5B9

Dear Dr. Wang:

**Re: Collaborative Research and Development Grants - Project (CRDPJ) entitled "Situation-aware and adaptive physical layer designs for highly efficient Wi-Fi (hew) in iot communications", with Huawei Technologies Canada**

This is to acknowledge receipt of the above-noted application to NSERC's Collaborative Research and Development (CRD) Program. Please refer to the File number indicated above, in correspondence relating to this application.

I will contact you in the near future if any further information is required for the peer review assessment of this proposal. Once the application is complete, input will be sought from external reviewers with expertise in the research area of the proposal. These reviewers are asked to complete their evaluation within four to six weeks. If minor issues are raised, we may offer you the opportunity to address these concerns. Your response may then be sent back to the reviewers for further comment.

If your application is awarded, you may be required to produce a signed Research Agreement conforming to NSERC's IP Policy: [http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/ip-pi\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/ip-pi_eng.asp). If this is the case, the award will be conditional upon NSERC's approval of the final signed Research Agreement. This agreement must be received by NSERC within 6 months of the date of the conditional offer, **after which the letter of offer will be withdrawn**. You are therefore encouraged to start discussions with your partner as soon as possible.

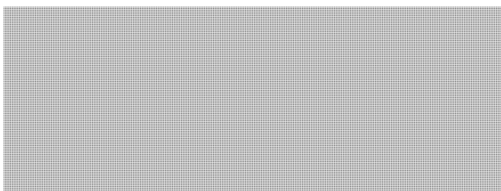
NSERC will attempt to reach a funding decision within ninety (90) days of receipt of a complete application and where no additional issues are raised during the peer review process. I will keep you informed of any significant delays.

**Canada**

.../2

You may contact me at any time if you wish to discuss the proposal or the timing of the review process.


Sincerely,



Jennifer Haley M.Sc  
Manager  
Research Partnerships

Telephone: 613- 943-8747  
Fax: 613-992-5337  
Jennifer.Haley@nserc-crsng.gc.ca

JH/ttd

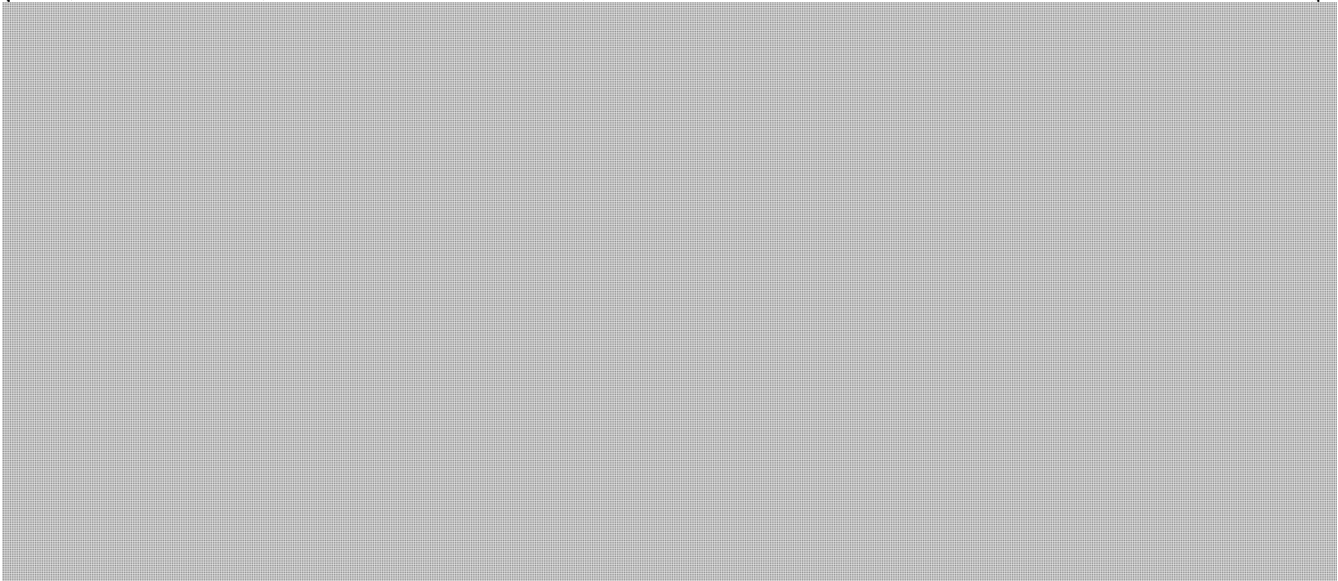
Cc: , Research, Western Ontario  
Huawei Technologies Canada

9 (SNG, CRD, I2I, IRC, DND)

Personal identification no. (PIN) <b>Valid</b> [REDACTED]	Family name of applicant <b>Wang</b>
--	---

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



**Bernier, Annie-France**

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**From:** Bernier, Annie-France  
**Sent:** July 22, 2019 2:18 PM  
**To:** 'Lynda McCutcheon'  
**Cc:** [REDACTED]  
**Subject:** RE: Withdrawal from NSERC CRD project

Dear all,

Thank you for noticing me of the departure of Dr. Salem.

After reviewing the information received, I approve the continuity of this CRD.

Please accept my best wishes for success in this research endeavour.

Sincerely,

Annie-France

----

Annie-France Bernier, B.Sc  
Program Officer | Administratrice de programmes Manufacturing, Communications and Technologies Division | Division de la fabrication, des communications et des technologies Research Partnerships | Partenariats de recherche Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

--

Annie-France.Bernier@nserc-crsng.gc.ca  
350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A 1H5 Telephone | Téléphone | 613-943-7831  
Facsimile | Télécopieur | 613-992-5337  
www.nserc-crsng.gc.ca | www.crsng-nserc.gc.ca

Introducing NSERC Alliance Grants – Canada's Research Partnerships Program Lancement des subventions Alliance, le programme de partenariats de recherche du Canada

Please feel free to reply in the official language of your choice. | N'hésitez pas à me répondre dans la langue officielle de votre choix.

-----Original Message-----

**From:** Bernier, Annie-France  
**Sent:** Tuesday, July 16, 2019 8:06 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Withdrawal from NSERC CRD project

[REDACTED]

I confirm that the email below is satisfactory to me.

Best regards,

Annie-France

-----Original Message-----

From: [redacted] mailto:[redacted]  
Sent: Monday, July 15, 2019 11:06 AM  
To: [redacted]  
Cc: Bernier, Annie-France; [redacted]  
Subject: Re: Withdrawal from NSERC CRD project

[redacted]

[redacted]

Thanks.

= [redacted]

> On Jul 15, 2019, at 11:01 AM, [redacted] <[redacted]> wrote:

> [redacted]  
> [redacted]  
> [redacted]  
> [redacted]

> Dear Annie,

[redacted]

> Thank you very much!

> Best wishes,

[redacted]

> [redacted]  
> [redacted]  
> [redacted]

> Huawei Canada  
> 11 AllState Pkwy  
> Markham, ON, L3R 5Y1  
> O. 905.944.5000 ext [redacted]  
> C [redacted]  
> [redacted]

> www.huawei.ca

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> please notify the sender by phone or email immediately and delete it!

s.13(1)(c)

s.19(1)

>  
> From: Bernier, Annie-France  
> [mailto:Annie-France.Bernier@NSERC-CRSNG.GC.CA]  
> Sent: Monday, July 15, 2019 10:41 AM  
> To: [REDACTED] <[REDACTED]>  
> Subject: RE: Withdrawal from NSERC CRD project

s.20(1)(b)

s.20(1)(c)

>  
> Hello [REDACTED]  
>  
> I do not need a signed letter. This email, confirming that you are aware that [REDACTED] is leaving from the project and that Huawei is still involved in the project, is satisfactory.

>  
> Thank you!

>  
> Annie-France

> ----  
> Annie-France Bernier, B.Sc  
> Program Officer | Administratrice de programmes Manufacturing,  
> Communications and Technologies Division | Division de la fabrication,  
> des communications et des technologies Research Partnerships |  
> Partenariats de recherche Natural Sciences and Engineering Research  
> Council of Canada | Conseil de recherches en sciences naturelles et en  
> génie du Canada

> --  
> Annie-France.Bernier@nserc-crsng.gc.ca  
> 350 Albert Street, Ottawa ON K1A 1H5 | 350, rue Albert, Ottawa ON K1A  
> 1H5 Telephone | Téléphone | 613-943-7831  
> Facsimile | Télécopieur | 613-992-5337  
> www.nserc-crsng.gc.ca | www.crsng-nserc.gc.ca

>  
> Introducing NSERC Alliance Grants – Canada’s Research Partnerships Program  
> Lancement des subventions Alliance, le programme de partenariats de  
> recherche du Canada

>  
> Please feel free to reply in the official language of your choice. | N’hésitez pas à me répondre dans la langue officielle de votre choix.

>  
> From: [REDACTED] mailto:[REDACTED]  
> Sent: Friday, July 12, 2019 4:06 PM  
> To: Bernier, Annie-France  
> Subject: RE: Withdrawal from NSERC CRD project

>  
> Dear Annie,



> Thank you very much and have a nice weekend!

>

> Best wishes,

[Redacted]

> Huawei Canada

> 11 AllState Pkwy

> Markham, ON, L3R 5Y1

> O. 905.944.5000 ext [Redacted]

> [Redacted]  
> [Redacted]

> www.huawei.ca

> This e-mail and its attachments contain confidential information from  
> HUAWEI, which is intended only for the person or entity whose address  
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> reproduction, or dissemination) by persons other than the intended  
> recipient(s) is prohibited. If you receive this e-mail in error,  
> please notify the sender by phone or email immediately and delete it!

> From: [Redacted] [mailto:[Redacted]]

> Sent: Thursday, July 11, 2019 9:25 AM

> To: [Redacted]  
> Cc: [Redacted]

> Subject: Withdrawal from NSERC CRD project

>

[Redacted]  
>

[Large Redacted Block]

NSERC has indicated that an

> email will be sufficient. It should be directed to Annie-France Bernier, who is the NSERC

> Program Officer for this project.

> Her email address is Annie-France.Bernier@NSERC-CRSNG.GC.CA

> <mailto:Annie-France.Bernier@NSERC-CRSNG.GC.CA>

>  
> Thank you very much,

>  
> [Redacted]

> Cheriton School of Computer Science  
> University of Waterloo

>  
>  
> On Jul 9, 2019, at 7:45 AM, [Redacted] wrote:

>  
> OK, thanks [Redacted] and [Redacted]

>  
> [Redacted]

>  
> [Redacted]

> On 2019-07-08 22:48, [Redacted]

>  
> [Redacted]

>  
> On Jul 8, 2019, at 9:59 PM, [Redacted] wrote:

>  
> H [Redacted]

> Best regards,

> [Redacted]  
> \*From:\* [Redacted] mailto:[Redacted] Sent:\* Monday, July 08,  
> 2019 11:09 PM \*To:\* [Redacted] \*Cc\* [Redacted]  
> \*Subject:\*Fwd: [Redacted]

[Redacted]

>  
> Thanks very much,

>  
> [Redacted]

> --  
>

>  
> [Redacted]

> Cheriton School of Computer Science

> University of Waterloo

>

>

> ----- Forwarded Message -----

> \*Subject:\*

>

> withdrawal from WHIJL project

> \*Date:\*

>

> Tue, 18 Jun 2019 23:11:42 -0400

> \*From:\*

>

> [Redacted]

> \*Organisation:\*

>

> University of Waterloo

> \*To:\*

>

> [Redacted]

> \*CC:\*

>

> [Redacted] <mailto:[Redacted]>

> [Redacted]

> [Redacted]

> <mailto:[Redacted]>

> [Redacted] <mailto:[Redacted]>

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>

>

> [Redacted]

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[Large redacted block]

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> --

[Redacted]

> Cheriton School of Computer Science

> University of Waterloo

>

**Pages 444 to / à 445  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**19(1), 20(1)(b), 20(1)(c)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Personal identification no. (PIN)

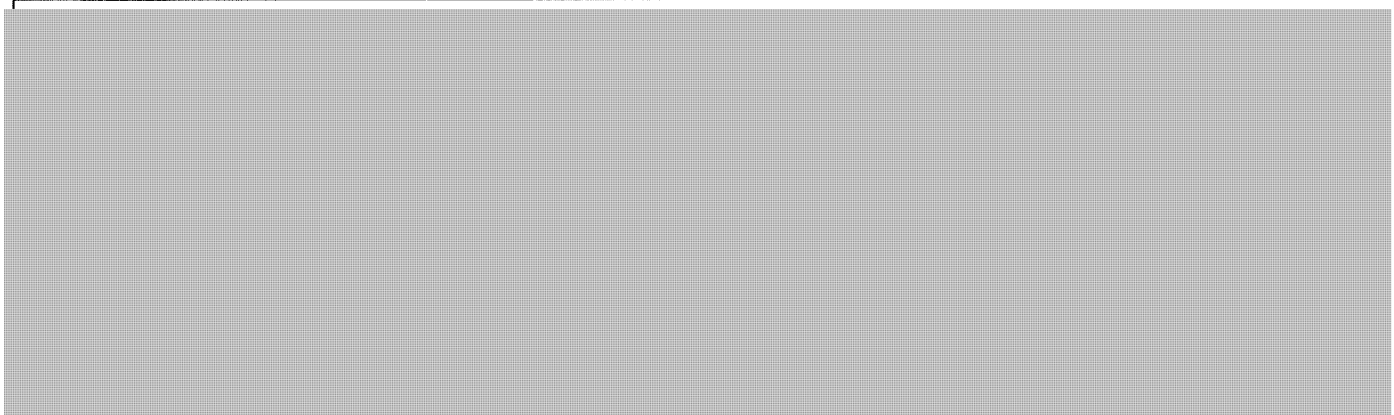
Family name of applicant

Valid

Wong

**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.



Large empty rectangular area for writing the intellectual property plan.



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

350 Albert Street  
Ottawa, Canada  
K1A 1H5

350, rue Albert  
Ottawa, Canada  
K1A 1H5


## Terms and Conditions of Award

### Grant Summary

**File:** CRDPJ 531863 - 18

**Project Title:** Continuous Graph Querying and Graph OLAP Using Differential Computation

**Grantee:** S. Salihoglu, David R. Cheriton School of Computer Science, University of Waterloo

**Partner(s):**  Huawei Technologies Co., Ltd.

**Project Start Date:** 2019/05/01      **Project End Date:** 2022/04/30

**Report Due Dates:**

Status Report	2020/04/01
Progress Report	2021/02/01
Final Report	2022/06/30

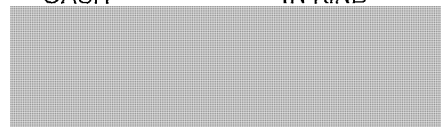
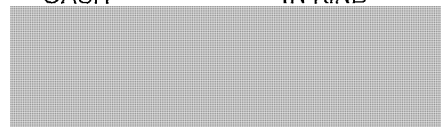
\***Status report** – Reminder will be sent to report any issues with the project or the partnership.

#### Amount of Award:

1/3	\$90,200	2019/05/01
2/3	\$90,200	2020/05/01
3/3	\$90,200	2021/05/01

#### Partner Contribution:

CASH	IN KIND
------	---------

	
--	--

Samir Boughaba  
Deputy Director  
Research Partnerships

Telephone: (613) 995-5710  
Fax: (613) 992-5337  
E-mail: Samir.Boughaba@nserc-crsng.gc.ca

## TERMS AND CONDITIONS OF AWARD



### Collaborative Research & Development Grants

#### 1. Introduction

The Terms & Conditions for a Research Partnerships (RP) grant is a statement that establishes the responsibilities of each party in the collaboration and highlights important policies affecting the grant.

By drawing on the funds provided through this award, you (the "grantee" or "co-grantee", collectively referred to as the "grantees") confirm that, during the tenure of this grant/award, you and the co-grantee(s) will comply with the following terms and conditions. You will insure that the terms and conditions of this award are known and understood by the partners and/or other participating organizations (collectively referred to as "the supporting organizations"). In addition, the grantees acknowledge their obligation to cooperate in working towards a successful outcome and to meeting their reporting and financial obligations.

#### 2. General

1. **You will use grant funds (including financial contributions from both NSERC and the partners) only for the specific purposes for which they were awarded.** Grant funds may not be used for items not approved, or for unauthorized purposes such as indirect costs of research.
2. You will provide true, complete, accurate information in any documents related to your grant/award, and you will represent yourself, your research and your accomplishments in a manner consistent with the norms of the relevant field
3. You will ensure that individuals who are named in any document(s) related to your grant/award have agreed to be included and to disclose their personal information in the document(s).
4. If you are a co-grantee, you agree that the grantee will administer the grant/award on behalf of the group/team.
5. You are not currently ineligible to apply for and/or hold funds from NSERC, the Social Sciences and Humanities Research Council (SSHRC), or the Canadian Institutes of Health Research (CIHR), or any other research or research funding organization worldwide for reasons of breach of policies on responsible conduct of research, such as ethics, integrity or financial management policies. If at any time you become ineligible for any of these reasons, you will advise your institutional officials and NSERC immediately, in writing.
6. You will comply with the  Tri-Agency Framework: Responsible Conduct of Research, which includes but is not limited to the Tri-Agency Financial Administration Guide, the Program Guide for Professors, and the Tri-Agency Research Integrity Policy, and with any amendments to these that NSERC may adopt.
7. If you are or have been (at any time during the past 12 months) a federal public servant, you have complied with and will continue to respect the  Values and Ethics Code for the Public Sector.

8. You consent to the sharing among the three federal granting agencies (NSERC, SSHRC and CIHR) and with any academic institution to which you are, or may become, affiliated, of any and all information, including personal information, in any way related to the application and to the grant/award.
9. In the event of any change in your eligibility status, you will inform NSERC and your institutional officials immediately, in writing.
10. You will inform institutional officials of any changes in the nature of the research that may have an impact on certification or approvals as in section 2.4 Agency Requirements for Certain Types of Research of the [Tri-Agency Framework: Responsible Conduct of Research](#).
11. You will inform NSERC and your institutional officials of any changes in the nature of the research that may require an environmental review/assessment or involves the use of human pluripotent stem cells. You will not proceed with these research activities requiring additional certification until NSERC approval has been obtained.
12. You will inform your institutional officials if your research plan changes to include new activities involving humans or the use of animals. You will not proceed with these research activities until institutional approval has been obtained.

Unless otherwise specified, the policies governing RP awards, including both the NSERC financial contribution and the partners' financial contribution are the same as those that apply generally to NSERC awards and to the use of grant funds.

In addition, you understand that the [Access to Information Act and the Privacy Act \(ATIP\)](#), and the [Use and Disclosure of Personal Information Provided to NSERC](#), pertain to the information NSERC collects from and about you.

### **3. Duration of the Award**

The duration of the award is indicated by the start and end dates in the Grant Summary. Should circumstances change, adjustments to these dates can be negotiated. A written request for an extension will be considered by NSERC and will be approved if the need for an extension is well justified, and as long as there is agreement with other participants and collaborators.

### **4. Schedule of NSERC Payments**

The approved amount of the grant is given in the Grant Summary.

In order to maximise the management of public funds, NSERC will release annual instalments of awards according to the following schedule:

- up to \$250,000 – one payment
- \$250,001 to \$500,000 – two payments at six month intervals
- \$500,001 to \$1,000,000 – four payments at three month intervals
- \$1,000,001 or more – monthly payments

### **5. Release of Instalments**

The second and subsequent instalments will be released on or about the anniversary of the start date subject to:



- the availability of funds;
- confirmation that the partner(s) have met their obligations in providing cash and in-kind support;
- confirmation of continued financial support by the partner(s) for the following term;
- satisfactory review of progress;
- demonstrated need for funds.

Depending on the above, the amount of the instalment is negotiable.

NSERC reserves the right to reduce or cancel a grant instalment if the continued need for funds is not demonstrated.

## **6. Research Objectives**

The grantees and the collaborators will make every effort to adhere to the approved research plan. NSERC must approve major deviations in the approved plan or research objectives **before** the changes are implemented.

## **7. Interactions among the Grantees and the Supporting Organizations**

Consistent with the intent of fostering productive research collaborations, the grantees will hold regular discussions with the supporting organizations to exchange information, examine results, review priorities and consider measures to enhance the mutual benefits. NSERC should be informed of any major developments or situations where NSERC staff might be of assistance.

## **8. Progress Reporting and Review**

As indicated in the Grant Summary, or upon request, the grantee will provide a report that describes progress to date and updates the plans for the future conduct of the research; and the resources required to complete the approved work.

Progress reports are requested at a frequency that depends on the size and the total duration of the award:

- all CRD awards are required to provide a final report;
- CRD grants with an awarded value  $\geq$  \$150,000 in the first year or on annual average, are required to provide an annual progress report;
- CRD grants with an awarded value  $\geq$  \$50,000 and  $<$  \$150,000 in the first year or on an annual average are required to provide a progress report near the end of each two year cycle:
  - near the end of year two for three and four year CRD awards;
  - near the end of year two and year four for five year CRD awards.
- at the end of year two and subsequent, where a progress report is not required, a confirmation of the continuing collaboration with the partners, receipt of the partner's contributions and the need for funds (grant account balance) will be requested from the grantee and the Institution;
- CRD grants with an award value  $<$  \$50,000 in the first year or on an annual average will not be required to provide a progress report.

NSERC will send reminders that a progress report or other information is due, and will provide guidelines on the items to be addressed.

At its discretion, NSERC may require a progress report when one is not normally required.

## **9. Budgets**

**Some latitude is allowed in adherence to planned expenditures, however; NSERC must approve the reallocation of resources of more than 20% of an approved budget item in advance** (e.g., the training of highly qualified personnel is an NSERC priority; **any deviations** in the approved training plan must receive prior authorization from NSERC).

NSERC bears no responsibility for expenditures beyond the amount in the grant account.

## **10. Participation of the Partners**

Each partner agrees to:

- honour its commitment to the project (in cash and/or in kind) as approved;
- provide periodic assessments, as requested by NSERC, to assist in the evaluation of the progress of the research;
- make every effort to use the project results in its Canadian operation and to the benefit of the Canadian economy and Canadians.

## **11. Intellectual Property**

The grantee and co-grantees, the universities, and partners agree to abide by *NSERC's Policy on Intellectual Property* ([http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi\\_eng.pdf](http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/ip-pi_eng.pdf)). *NSERC's Policy on Intellectual Property* (IP) supports the premise that every effort should be made to exploit the results of NSERC-funded research for the benefit of Canada and Canadians. As a condition of accepting an award, NSERC grantees agree to disclose to their institutions any IP with commercial potential arising from the award should they decide to pursue commercialization. If you disclose any potential IP arising from the research, you and the institution will endeavor to obtain the greatest possible economic benefit to Canada from the resulting commercial activity. This requirement for disclosure is not intended to supersede the IP ownership policy that the institution might already have in place.

## **12. Change of Status – Grantees**

The grantee and/or the university will inform NSERC immediately of significant changes in the status of the grantee and/or the co-grantees such as taking a sabbatical, or other leave, or upon permanent departure from the university.

## **13. Change of Status –Partners**

The grantee will notify NSERC immediately of any change in status of the partners in the grant. These changes could include any or all of the following:

- contact name at the organization;
- buyouts, change of ownership and subsequent name change of the organization;
- withdrawal or adjustment of cash and/or in-kind support;

- new organizations participating.

Depending on the change, a new Form 183A (Information Required from Organizations Participating in Research Partnerships) may have to be completed, including a letter of support (<http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/183A/e.asp>).

#### **14. Termination of Support**

NSERC reserves the right to terminate support at any point:

- should progress be found to be unsatisfactory;
- if the support of the partner(s) falls to a level substantially less than the amount stated in the Grant Summary, or is withdrawn entirely and a suitable replacement cannot be found;
- for other issues that may arise.

In the event of early termination of an award, NSERC will negotiate an orderly phase-out of the project or program to ensure minimal disruption especially for any HQP in training. However, in cases where there is an allegation of a breach of NSERC policy, or a confirmed breach, the Tri-Agency Framework: Responsible Conduct of Research applies.


#### **15. Public Announcements and Acknowledgement of NSERC Support**

NSERC normally makes a decision on the need for an official public announcement of competition results. Your institution must refrain from making any announcements until this takes place. All announcements of awards must be made in adherence to the <http://www.science.gc.ca/default.asp?lang=En&n=711200B1-1> (also see relevant sections of the <http://www.science.gc.ca/default.asp?lang=En&n=56B87BE5-1>).

Funding recipients may be asked to take part in NSERC's public announcement. This does not prevent you from confidentially sharing information about your funding with your collaborators or referring to NSERC funding in applications for other funding. If you foresee any issues or concerns arising from this condition, please contact NSERC.

By drawing on the funds provided through this award, the grantees agree that in all communications relating to the research, or research results, they will acknowledge NSERC support and the support of the participating Canadian Government department and/or agencies.

#### **16. Consent to Disclosure of Personal Information:**

You understand that maintaining public trust in the integrity of researchers is fundamental to building a knowledge-based society. By accepting funding from CIHR, NSERC and/or SSHRC, you affirm that you have read and you agree to respect all the policies of these agencies that are relevant to your research, including the  Tri-Agency Framework: Responsible Conduct of Research. In cases of a serious breach of agency policy, the agency may publicly disclose any information relevant to the breach that is in the public interest, including your name, the nature of the breach, the institution where you were employed at the time of the breach and the institution where you are currently employed, and the recourse imposed against you. You accept this as a condition of applying for, or receiving agency funding, and you consent to such disclosure. If you do not agree to the disclosure of your personal information, you cannot participate in this grant/award.

**Note:** If you have any concerns about your ability to comply with the terms and conditions listed above, contact your institutional official or NSERC staff responsible for the program immediately. Do not agree to the terms and conditions and do not draw down on any funds paid to you or to the host institution until you are certain that you can and will comply with all of the requirements.



Natural Sciences and  
Engineering  
Research Council of Canada

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Ottawa, Canada  
K1A 1H5

Conseil de recherches en sciences  
naturelles et en génie du Canada

350, rue Albert  
Ottawa, Canada  
K1A 1H5

April 23, 2019

File: CRDPJ 531863 - 18

**PROTECTED B**

Dr. S. Salihoglu  
David R. Cheriton School of Computer Science  
University of Waterloo  
200 UNIVERSITY AVE W  
WATERLOO ON N2L 3G1

Dear Dr. Salihoglu:

**Re: Collaborative Research and Development Grants – Project (CRDPJ) entitled  
"Continuous Graph Querying and Graph OLAP Using Differential Computation",  
with Huawei Technologies Co., Ltd.**

I am pleased to inform you that NSERC has approved in principle the above-mentioned grant at the University of Waterloo.

NSERC strongly recommends that a research agreement between the university and the partner, compliant with NSERC's Policy on Intellectual Property, is signed before the research collaboration starts. NSERC no longer requires submission of a copy of the signed research agreement.

I enclose for your information copies of the reviews solicited on behalf of your application and the *NSERC Guidelines for External Reviewers*. The identities of the authors and any third party reference have been removed following the principles of the Privacy Act. Please note that one of the external reviewer reports was originally written in French. NSERC translated it to English. Both versions are enclosed.

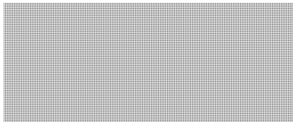
The cash commitments of NSERC and the partner to this project are summarized below.

	Original Amount Requested	Partner Cash	Partner In-kind	Amount Recommended
Year 1				\$90,200
Year 2				\$90,200
Year 3				\$90,200
<b>TOTAL</b>				<b>\$270,600</b>

Periodic reporting will be requested at specific times. The Terms and Conditions of this award will be sent to you with the release of the first instalment.

Please do not hesitate to contact me if you need any assistance.

Sincerely,



Samir Boughaba  
Deputy Director  
Research Partnerships

Telephone: (613) 995-5710  
Fax: (613) 992-5337  
E-Mail: Samir.Boughaba@nserc-crsng.gc.ca

SB/ha

Enclosure

cc: [Redacted] Research, Waterloo  
[Redacted] Huawei Technologies Co., Ltd.

9 (SNG, CRD, IZI, IRC, DND)

Personal identification no. (PIN)  <b>Valid</b> [REDACTED]	Family name of applicant  Damen
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**INTELLECTUAL PROPERTY**

Complete this section if you need to discuss the plans for protecting and disposing of intellectual property arising from the grant. Do not exceed one page.

